DOCUMENT RESUME

ED 050 942 SE 010 486

TITLE	The Population Problem and the Physician.
INSTITUTION	American Medical Association, Chicago, Ill.
PUB DATE	70
NOTE	121p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$6.58
DESCRIPTORS	Conference Reports, Contraception, *Family Planning, *Health Education, *Health Services, Physicians, *Population Trends, *Social Influences, Speeches

ABSTRACT

Contained in this document are 16 speeches presented by leading physicians at the American Medical Association Congress on Environmental Health, May 1970, in Washington, D.C. Primary concerns are in the areas of population, family planning, and related health services. Speeches are entitled: The Education of the Professionals; Health Service Programs, Plans; The A.M.A. and Population Problems; Towards a Population Policy for the United States; On Population Problems in the United States; Family Planning-U.S. Programs; Family Planning-World Programs; World Population; Clinical Aspects of Contraception and Fertility Control; Contraceptive Practice and Fertility Control in the U.S.A., 1965-Summary of Findings; Role of Health Services Private Practice, The Ghetto; The Non-Ghetto; Comments on Professor Notestein's Statement on World Population; Comments on Dr. Philip M. Hauser's Remarks regarding Population Problems in the United States; and Stabilizing U.S. Population Growth: A Political Strategy. A personal data sheet for each speaker is also included. (BL)

THE POPULATION PROBLEM AND THE PHYSICIAN

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AMA CONGRESS ON ENVIRONMENTAL HEALTH

May 4-5, 1970 • Statler-Hilton Hotel • Washington, D.C.

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Doctor Barnes is presently Director, Department of Gynecology and Obstetrics, John Hopkins University School of Medicine and Consultant in Population at the School of Hygiene and Public Health.

He was formerly Professor and Chairman, Department of Obstetrics and Gynecology at Ohio State University School of Medicine and Western Reserve School of Medicine.

Doctor Barnes received his M.D. degree from the University of Pennsylvania College of Medicine and an M.S. degree in Obstetrics and Gynecology from the Graduate School of the University of Michigan.

He is a Diplomate, American Board of Obstetrics and Gynecology and Fellow, American Medical Association. His paper "Body Production of ACTH in Response to Gynecologic Surgery and Irradiation" received the 1952 Foundation Award for gynecologic research of the American Association of Obstetricians and Gynecologists.

JOSEPH D. BEASLEY, M.D.

Doctor Beasley is currently the Chairman, Department of Family Health and Population Dynamics at the Tulane University School of Public Health and Director, Center for Health Services Research. He is the President and Director of Family Planning, Incorporated.

Doctor Beasley formerly served as Director, Center for Population Studies and Professor, Maternal and Child Health and Pediatrics at Tulane University.

He attained his M.D. degree from Emory University and a M.P.H. degree in Maternal and Child Health from Tulane University.

Doctor Beasley is a Member of the National Advisory Health Council and a Member of the Advisory Committee to the Secretary of Health, Education and Welfare on Health Protection and Disease Prevention. He is Chairman of the Board, Planned Parenthood Federation of America.

WALTER C. BORNEMEIER, M.D.

Doctor Bornemeier is President-elect of the American Medical Association. He is senior attending surgeon at Illinois Masonic Medical Center.

He has served as Speaker of the AMA House of Delegates since 1960 and was Vice Speaker for the preceding three years. He was also President of the Tuberculosis Institute of Chicago and Cook County (1962-64); recepient of the Tuberculosis Institute Medal in 1966; member of the Board of Directors of the National Tuberculosis and Respiratory Disease Association; and a member of the Board of Directors of the Illinois Medical Society.

For 20 years Doctor Bornemeier was an instructor in surgery at Northwestern University Medical School, from which he received his M.D. degree.

Doctor Bornemeier is the author of several papers and holds the Distinguished Alumnus award from North Central College in Naperville, Illinois.

IRVIN M. CUSHNER, M.D.

Doctor Cushner is Associate Professor, Gynecology and Obstetrics, Johns Hopkins University School of Medicine and Andelot Director of the Center for Social Studies in Human Reproduction.

He was formerly Chief, Division of Maternity Hygiene, Baltimore City Health Department; and Acting Chief, Obstetrics and Gynecology, for the Baltimore City Hopsitals.

He attended the University of Maryland and received his M.D. degree from the School of Medicine in 1947.

Doctor Cushner has been Chairman of the Committee to Formulate Guidelines for Therapeutic Abortion, Medical and Chirurgical Socitey of Maryland. He is a Diplomate, American Board of Obstetrics and Gynecology.

ROGER O. EGEBERG, M.D.

Doctor Egeberg is currently the Assistant Secretary for Health and Scientific Affairs, U.S. Department of Health, Education, and Welfare.

Formerly, he was the Dean, University of Southern California School of Medicine and Medical Director, Department of Charities, Los Angeles County.

A graduate of Cornell University, he received his M.D. degree from the Northwestern University School of Medicine.

He has served on the President's Panel on the Special Study of Narcotics and the President's Advisory Committee on Narcotics and Drug Abuse.

During World War II, Dr. Egeberg served as personal Physician and Aid-de-Camp to General of the Army, Douglas MacArthur.

MOYE W. FREYMANN, M.D.

Doctor Freymann is Director, Carolina Population Center and Professor of Health Administration, University of North Carolina at Chapel Hill.

Formerly, he was Visiting Professor of Population Studies at the University of Michigan School of Public Health. Doctor Freymann has served as Chief Consultant in Health and Population, Ford Foundation India Officer and Regional Health Officer, U.S. Technical Assistance Mission to Iran.

He attained his M.D. degree from Johns Hopkins University and a Doctor P.H. degree from Harvard University.

Doctor Freymann is a Diplomate of the American Board of Preventive Medicine. His publication "Cracking the World Population Problem: A U.S. Goal for the '70's" was prepared for the Presidential Task Force on International Development.

ALAN F. GUTTMACHER, M. D.

Doctor Guttmacher is currently President of the Planned Parenthood Federation of America, a diplomate in Obstetrics and Gynecology at the Mount Sinai School of Medicine.

He was formerly Clinical Professor at Columbia's College of Physicians and Surgeons and lecturer at the Harvard School of Public Health.

Doctor Guttmacher attained his M.D. degree from the Johns Hopkins School of Medicine. He taught anatomy at his alma mater and rose to the rank of Associate Professor of Obstetrics, a post held until 1962.

He is the author of many scientific and popular books and articles on contraception, infertility, pregnancy, twinning, and the history of medicine. His most recent book, "Birth Control and Love", deals with the past, present, and future of contraception.

He is past President of the New York Obstetrical Society and formerly Chairman of the Central Medical Committee of International Planned Parenthood Federation in London.

OSCAR HARKAVY, PH.D.

Doctor Harkavy is currently the Program Officer in charge of the Population office for the Ford Foundation. His office supports research and training in reproductive biology, demography, family planning administration, and other activities relevant to population problems.

Prior to joining the Foundation, he was an Associate Professor of Business Administration at Syracuse University.

Doctor Harkavy was graduated with honors from Columbia University in 1944. He was awarded a doctor's degree in economics by Syracuse University in 1952.

His publications include articles on population growth and economic development, and the impact of family planning programs on the birth rate. In 1968, he was appointed to the President's Committee on Population area Family Planning.

PHILIP M. HAUSER, Ph.D.

Doctor Hauser is Professor of Sociology and Director, Population Research Center and Chicago Community Inventory, University of Chicago.

He formerly was Chairman, Department of Sociology at the University of Chicago. He has served as Acting Director and Deputy Director, U.S. Bureau of the Census.

He received his Ph.D. degree in Sociology from the University of Chicago and an LL.D. degree from Loyola University.

Dr. Hauser is a Past President of the American Sociological Association and the Population Association of America. He is the co-author of "Housing a Metropolis - Chicago" and editor of "The Population Dilemma."

JOHN L. S. HOLLOMAN, JR., M.D.

Doctor Holloman is a general practitioner of medicine in New York City. He is a Past President of the National Medical Association.

He attained his M.D. degree from the University of Michigan and received postgraduate training in Internal Medicine at Cornell University.

Doctor Holloman is Chairman, Board of Trustees, Virginia Union University, Richmond, Virginia, and a member of the Board of Trustees, State University. He is the present Chairman of the Physician Forum and a Member, New York Academy of Medicine.

Doctor Holloman serves on the Advisory Health Committee to the New York State Civil Service Commission.

SCHUYLER G. KOHL, M.D.

Doctor Kohl is the Associate Dean, State University of New York Downstate Medical Center and Lecturer in Public Health and Administrative Medicine, Columbia University.

He was formerly Assistant Dean and Professor in Obstetrics and Gynecology at the Downstate Medical Center.

He received his M.D. degree from the University of Maryland School of Medicine and a Doctor of Public Health degree in Biostatistics, Columbia University School of Public Health.

Doctor Kohl is a Member of the Regional Advisory Committee on Health Statistics of the Pan American Health Organization - World Health Organization.

His publications include the book "Study of Perinatal Mortality in New York City - 1950."

GARY D. LONDON, M.D.

Doctor London is the President, Health Systems, Incorporated, for Los Angeles, California, and Consultant to the U.S. Department of Health, Education and Welfare Center for Family Planning Program Development.

He has previously held positions of Director, Health Services Office; and Director, Family Planning Program for the Office of Economic Opportunity, Washington, D.C.

He received his M.D. degree from New York University and took residency training in Obstetrics and Gynecology from the Los Angeles County General Hospital.

Doctor London was awarded the Carl G. Hartmen Award in 1966 from the American Fertility Society in recognition of his highly significant contributions to the knowledge of fertility, sterility and allied subjects.

MILOS MACURA, PH.D.

Doctor Macura is currently Director of the Population Division at the United Nations.

He was formerly Professor of Demography, University of Belgrade; Director, Demographic Research Centre, Institute of Social Sciences; and Director, Federal Institute of Statistics.

Doctor Macura received his Doctor's degree in economics from the University of Belgrade.

His most recent publication concerns the Long-Range Outlook - Summary of Current Estimates, in World Population - The View Ahead.

Doctor Macura is a member of the International Statistical Institute, International Union for the Scientific Study of Population, and the Population Association of America.

FRANK W. NOTESTEIN, PH.D.

Doctor Notestein is the President Emeritus of the Population Council, which was founded in 1952 and works on scientific aspects of population change throughtout the world.

For more than two decades, he was the Professor of Demography and Director of the Office of Population Research at Princeton University. He was the organizer and first director of the Population Division of the United Nations.

He received his Bachelor of Science degree from Wooster College and took his doctorate at Cornell University in 1927.

Professor Notestein has served in India as consultant on problems of implementing the population policies of the Indian Government and helped to start a center for training and research in demography. He is a former president of the Population Association of America and co-editor of Population Index.

SHELDON J. SEGAL, PH.D.

Doctor Segal is the Director, Bio-Medical Division, The Population Council, The Rockefeller University, New York.

He has previously served as Visiting Professor of Reproductive Biology, Ale-India Institute of Medical Sciences, New Delhi, India; and Consultant on Reproductive Biology for the Force Foundation.

He received his B.A. degree from Dartmouth College and a Ph.D. degree in Emoryology and Biochemistry from the State University of Iowa.

Doctor Segal is the author of fifty publications in the field of endocrinology, fertility and family planning. He is a Member, Sub-committee on Oral Contraception, Medical Committee, International Planned Parenthood Federation and Consultant to the Obstetrics and Gynecology Advisory Committee to the Food and Drug Administration.

CONRAD TAEUBER, PH.D.

Doctor Taeuber is the Associate Director of the U.S. Census Bureau in charge of demographic fields.

He was formerly Assistant Director of the Bureau and has served as chief of the statistics branch of the Food and Agriculture Organization charged with the worldwide development of agricultural statistics.

He received his M.A. and Ph.D. degrees from the University of Minnesota.

Doctor Taeuber was elected President of the Inter-American Statistical Institute in 1967. His publications include Rural Migration in the United States and The Changing Population of the United States.

JOSEPH D. TYDINGS

Senator Tydings first entered the United States Senate in January 1965 and serves on Judiciary and Commerce Committees and is Chairman of the District of Columbia Committee.

He was previously United States Attorney for Maryland (1961-1963), a member of the Maryland House of Delegates (1955-1961), and has been a delegate to such international meetings as: NATO Assembly in Brussels, 1968, and Council on Intergovernmental Committee for European Migration, Geneva, 1966.

A graduate of the University of Maryland, he received his LL.B. degree from the University of Maryland Law School.

Senator Tydings has been the recipient of many awards of distinction and has published numerous articles on legal and political subjects of national interest.

CHARLES F. WESTOFF, PH.D.

Dr. Westoff is currently Chairman of the Department of Sociology and Associate Director of the Office of Population Research at Princeton University.

He was formerly a research associate and Assistant Director of the Office of Population Research. For three years, he was an associate professor and Chairman of the Department of Sociology and Anthropology at New York University's Washington Square College.

Dr. Westoff holds an M.A. degree in sociology from Syracuse University and attained his Ph.D. degree from the University of Pennsylvania.

He has been engaged in extensive research concerning social and psychological factors affecting fertility, and he is the co-author of Family Growth in Metropolitan America, The Third Child and The Later Years of Childbearing.

THE EDUCATION OF THE PROFESSIONALS

Allan C. Barnes, M.D.

I am going to begin by violating the title which I have been assigned. This is a speaking technique which is as old as the Roman forum and presumably as eternal as the Greek agora. I have been given "The Education of the Professional" and I would like to include the education of nonprofessionals as well as semi-professionals. Indeed, I am not always sure through the infinite gradations of life where professionalism begins or ends. Clearly there are four groups that can be identified that need education on this all-pervading topic. There is the public, the paramedical personnel, the medical student, and the physicians themselves. With respect to each of these groups, we have differing assignments, and with each of these groups we must raise different questions.

THE STUDENTS

Question: What? Who? When? How?
Assignment: Demonstrate relevance.

What should be taught in the core curriculum itself does not need to be extensive. Clearly, every medical student does not need to become an accomplished demographer. On the other hand he should know the definitions of and methods of calculating the basic rates: birth rate, death rate, fertility rate etc. etc., and he should know the primitive relationships between these (thus that when the death rate falls the birth rate will also fall and why this is so).

Likewise every student does not need to become an accomplished abortionist nor technically proficient at tubal sterilization. He should know, however, what weapons are available to stem the tide of this flood; their indications, prerequisites and limitations. Above all he should know that the prevalent feeling that the perfect weapons are already at hand is a comfortable feeling but totally incorrect, and that the area represents a challenge, crying out for able and devoted investigators.

Every student does not need to be a compleat ecologist nor agronomist, but he should recognize that nutritional impact of a tight food supply, and should see the inevitable effort of losing the time to pass our grains through an animal. "Enough food" is only part of the battle; as the diet becomes protein deficient and loaded with starch, "appropriate food" also becomes an objective.

Every student does not need to become a knowledgeable behavioral scientist, but the student must be given some awareness of motivational differences between different groups, and the impact of local mores on the acceptance of family planning advice. Because an approach appears "right" in an abstract or scientific sense, does not mean that it is applicable and will be welcomed with open arms by the population involved.

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Dr. Barnes is the Professor and Chairman of the Department of Gynecology and Obstetrics at the Johns Hopkins University School of Medicine, Baltimore, Maryland.

The question as to Who should teach this is perhaps best answered by this brief review of What should be taught. No one person at present can accomplish this task. There will be perhaps such a person in the future, a new specialist in Population Medicine arising from our present Freshman and Sophomore classes. When that happy day dawns bright on medical academe, one faculty member can take this responsibility; in the meantime this must be committee teaching. The behavioral scientist, the psycho-social worker, the public health officer, the ecologist and the obstetrician-gynecologist must all be intensely involved. And the chairman of such a faculty committee should not be the member with the greatest seniority or loudest voice. It should be the person with the greatest commitment, the one whose burning zeal shines through every teaching hour.

When should it be taught? There is a shibboleth of growing popularity to the effect that the sooner in medical school one has contact with the student, the more effective the message and the more rewarding the proselyting. There is some truth in this concept, but if it were entirely axiomatic, all students would become gross anatomists. At the other end of the spectrum, tacking a course on in the last few months of senior year would seem to indicate almost a faculty disrespect. All of us are aware of the sound of the computer in the matching plan and the effect on our students of the mid-March pronouncement from Chicago. The initial symptom is a hangover, and the subsequent course of the illness is a mounting disinterest in all but the chosen field. Between the extremes of the opening day and the closing months, however, we have found the course in behavioral science given in the second half of the first year an excellent vehicle for the introduction of most of this material, and have encountered tremendous student enthusiasm.

How it should be taught will depend to an extent on the personalities and preferences of the teaching committee. Certainly it is an area where a wealth of impressive analogies, examples and teaching aids are available. In addition to being presented the material, however, the student must be shown the material. If the teaching hospital in which clinical clerkships are served is cautious about dispersing contraceptive advice, reluctant to perform surgical sterilization on request, and is hung up on the matter of the liberal use of abortion, all the didactic presentations in the world are not going to make converts of the students. Precept must be associated with example, and working on a busy clinical service whose population control procedures are carried out with a sense of overwhelming urgency is more valuable than all the pamphlets ever printed.

Relevance can be conveyed by having every laboratory exercise deal with local figures. While the population growth figures for South America are frightening, each student should have as his class exercise the construction of the appropriate charts for his own community or state. Calculations of unwanted pregnancies can be achieved from one's own clinic population. This is not someone else's problem....this is on all hands.

Before turning to the topics of the education of paramedical personnel and other groups, may I make a few personal comments and raise some questions.

While the record is not completely clear, I must have entered school around 1917. Since that time I have been continuously associated with

teaching institutions, largely, I find, in the role of a student. As the chairman has announced, this long association with academe is about to end.

The belief that the swan sings sweetly just before it dies has achieved the patina of age but has no basis in reality. I am assured by ornithologists that a swan song may be as strident, as urgent, as the occasion demands; that it need not be all sweetness and soft melodies.

While I can still say "we" about the academic community, therefore, and before I have to start saying "you," let me raise some questions.

Why doesn't every department of biochemistry have at least one person devoted to investigating the sequence of events from gametogenesis to birth with the sole objective of finding a weak link where this sequence could be interrupted? Why isn't every department of pharmacology concerned with the pharmacologic control of tubal motility, for example? If, in truth, the problems of society are the concerns of the University, what accounts for the paucity of research effort in our medical schools directed toward population control?

Is it perhaps because we have failed to dignify this problem sufficiently as an area for the investment of one's scientific talent? Have we by word or action indicated that promotion and standing in the academic community are related to studying the mitochondrial membrane but not to discovering a luteolytic agent to destroy the corpus luteum? In the activities of our clinical departments is the keeping of an elderly coronary case alive a few more months given more accord than the aborting of a 15-year-old-illegitimately pregnant girl? While I can still say "we" may I use Pogo's famed statement, "We have met the enemy and they are us"? Have we in all honesty in our academic structure given the impetus to this topic that it so urgently needs? "Let a man examine himself."

THE PARAMEDICAL PERSONNEL

Question: Are they needed? Are they safe? Are there enough?
Assignment: Provide a career ladder.

We in Obstetrics-Gynecology have one great asset:- We have, already on hand and almost globally distributed, the midwife. These trained and competent associates are already a part of our health care structure. We have no need to invent, locate and train our allied health workers; they are historically identified.

There are in this country eight schools for nurse-midwives. This is not enough and our needs will be greater than they can fulfill. Already many health care programs are unable to fill their job slots; many large community hospitals are unable to maintain their complement of midwives. We need, then, two things:- To increase class size and renew our efforts at proselyting, and to introduce family planning procedures into the curricula.

Increasing class size is not easy. This will, in most instances, require funding which is not always readily available. The Health Manpower program seems committed to newness....new programs or new approaches are stressed.... therefore obstetrics is penalized for being ahead of other disciplines, because

midwifery is rated as old. Nevertheless, a foresighted government will hopefully not ignore this potential for extending the arm of the physician.

The introduction of family planning into the midwife program has been carried out already at many centers. Indeed, studies have indicated that these women can be trained in the introduction of the intrauterine device with safety. In several of New York City's Hospitals the Family Planning Clinic is a midwife function. We must educate to achieve more of this level of help; the needs are too great to permit the luxury of one physician for each contraceptive dispensed or applied.

They are needed, they are safe; there are not enough. Let us insure that the family planning-population control personnel have a career ladder, its practitioners can move to some role of leadership, and then let us educate to provide more numbers.

THE PHYSICIAN

Question: How do you move the Rock of Gibralter?
Assignment: Dignify the activity.

We are at a time in history when attitudes and the corresponding actions must change radically. The nature and extent of that change is most simply indicated by the shape of the traditional curve of the world's population growth. Our forefathers lived on the flat side of that graph; we and our children are condemned to subsist on the upright side of the curve.

We cannot look back to the accumulated wisdom of the centuries for guidance, because that wisdom was being accumulated when the population was growing slowly, almost painfully on the flat side. Do not quote to me the Bible; it was written on the flat side. Do not even tell me of my grandfather's opinions and sense of morality; they were the opinions of a world seemingly in balance with its environment. I must live on the upright side, and my children must live even more precariously and my grandchildren may not be able to live at all.

. Violent transitions are necessary to achieve such a shift in attitude and effort. And we are accustomed to regard the medical community as resisting transitions, violent or not. They are, we are sure, conservative, reactionary, heel dragging and afraid of malpractice suits. They would appear to be almost uneducatable for the new postures that medicine will have to adopt.

In their defense, let me say this. These attitudes and attributes did not arrive in the body medical with the genes and chromosomes; they were trained in. Our academic predecessors created these concepts; ingrained these postures. Doctors simply need the current educator to lead the way in retraining; re-educating.

The majority of practitioners in America were taught that "abortionist" as a word was a stigma to be avoided; surgical sterilization was a desperate measure for the medically ill of high parity and proper age; contraception was whispered about and was prescribed for the married after the honeymoon. Their lack of training in the realms of sexuality and marital counselling has been the subject of surveys by Lief and others. Now we must reassure them

that Abortionist is a title to be borne proudly, that anyone old enough to buy toothpaste is old enough to buy contraceptives, and that the phrase "on demand" translates to the words "chief complaint." When a woman comes to me with the problem of excessive vaginal bleeding, everything I subsequently do to bring that under control is being done on demand. When I ask a woman for her chief complaint, I am asking what she demands of me. Abortion on demand or sterilization on demand are not phrases which should cause sub-axillary perspiration, they represent legitimate chief complaints of a populace living on the upright side of the curve. We must dignify this activity exactly as someone somehow managed to dignity appendectomy, tonsillectomy and a wide range of medical services.

THE PUBLIC

Question: You mean we have to educate them?
Assignment: Personalize the Problem.

In the question, of course, the "we" is the medical profession, and the "them" is hair-dressers, elevator operators, taxi drivers. In the abstract these and related peoples are all right, but concretely when we face the need of educating them we are apt to cast about and say that this is a job for the social worker, the legislator or some other group.

This educational task is of course for many groups, indeed for all concerned citizens. But it seems to me an overwhelming medical responsibility not only because we created the problem in lowering the death rate (and particularly the perinatal death rate), but also because the weapons for its correction are in our hands, and the availability of these weapons can be most logically explained by us.

The direct approach for these groups for educational purposes has not always been the doctor's "ball of wax." He will have to call on the voluntary agencies for assistance, appeal to his public health colleagues and public health agencies for guidance. But he cannot, in good conscience, sit idle. The neuro-surgeon who elevates a depressed fracture in the skull of a construction worker has not completed his task until he educates the workers and the legislators in the need for protective helmets for construction work. The orthopod attending a case of accidentally acquired fractures has not completed his job until he educates in the need for automobile seat belt legislation. And the obstetrician, delivering a woman of an unwanted baby has not completed his job until he educates far and wide on child spacing, family planning and population regulation.

For public education we will have to involve the news media. Will somebody tell me, parenthetically, why the newspapers universally don't carry a population growth story on their front page daily. Most papers carry a Vietnam War story daily, yet the war in Vietnam, as either a social or political or moral problem, is insignificant compared to the topic we have been considering these last two days. We can gain the expanding circle phenomenon by teaching the teachers. I look with anticipation on the program proposed for this year of a summer workshop on Population to be given for high school and grade school science and biology teachers. If we are going to remotivate a whole generation of little girls to want to grow up and have one or two children instead of growing up and having four or five children, this motivation must be achieved early. The proposed teaching conference, which will be held in

Baltimore, was seven times over-subscribed within a week after its announcement, and hopefully many other similar programs of educating the educator can be mounted across the nation. In each of these the physician must play a role and make a contribution. It is our responsibility, and the posture of the ostrich is not only awkward, in this circumstance it is dangerous.

The assignment to personalize the problem is self-evident. What effects a remote corner of the world does not always stir our hearts as deeply as the matters which affect us immediately. The attempt to make the population problem evident on the surface requires making it a personal, not a remote statistical matter. Cerebral Palsy has its annual poster child, as does the March of Dimes and muscular dystrophy. Why not a child for Population? The timing would be particularly appropriate since the 1969 cohort represents the group which will live to see population saturation.

Purely as an example I have selected such a child. I am certain no one in this audience needs this commentary, but nevertheless I would conclude with a 90 second presentation which personalizes the problem.

PICTURE

This is Christopher. Christopher was born August 22, 1969. When he is 35 years old, the world will be twice as populated as it was that August 22nd. When he is 55 years old, the population will again have doubled.... making it four times the size it was on his day of birth. This number, 16 billion people, approaches global saturation. Clearly, if he survives to 65, he will see a population incompatible with life. The generation which must face population saturation is being born now.

When Christopher looks back to see what society was doing to prevent this catastrophe, where will he find your name written?

HEALTH SERVICE PROGRAMS, PLANS

Joseph D. Beasley, M.D.

It is a real pleasure to be able to participate in the American Medical Association Congress on Environmental Health and to address the issue, "The Population Problem and the Physician." Within this broad area, the particular topic that has been assigned to me is health service programs and plans. However, before getting into my main presentation, I would like to take this opportunity to comment on the very important yet depressing relationship between environment and people.

I think one of our most precious and hard won freedoms--the right of parents to plan their families-- is once more threatened. For nearly three quarters of a century, we have battled against the forces of oppression and ignorance, to win for parents the right to determine when and how many children they will have. Now, when we are just on the verge of securing this right, in fact as well as theory, it is about to be snatched away. It is not the sense of public morality which denies couples this right, but it is the concern with saving the environment. Some individuals contend that unless strong legislative controls are established people will breed themselves into an ecological catastrophe. I think that this contention rests on the simplistic relationship that has been established between population growth in this country and the problems of pollution and degradation of the environment. Pollution and environmental problems are very real. However, in my opinion we, as medical leadership, cannot "cop-out" on the people problem because of the pollution or environmental problems.

It seems to me that in the field of family planning and population we have the choice to either wait for the perfect form of technology or develop better systems for applying the technology that we currently have available. I think that in the United States and internationally it would be a very serious mistake to wait until we develop perfect types of technology before developing effective delivery systems. In the United States our fertility rates are in a period of great influx. Our fertility rates have been falling consistently since 1957. This phenomena has happened at a time when contraceptive technology is far from perfect, the delivery of effective family planning services are denied to millions of people, and voluntary abortion and sterilization are forbidden or highly restricted in most states. Westoff has presented evidence that at least twenty-two percent of all babies born to married couples in the United States were unwanted by at least one spouse. The evidence of these unwanted children may reflect a deficiency in the present delivery of family planning information and services. Our immediate challenge in the field of family planning and population must be to develop effective delivery systems that optimally utilize present technological knowledge.

I would now like to illustrate with slides some of the components that I think are important to the development of effective health delivery systems. I would also like to relate to you some experiences that we have had in the

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Beasley is Chairman, Department of Family Health and Population Dynamics at the Tulane University School of Public Health.

development of a health delivery system in Louisiana.

Our interest in the development of delivery systems began in 1964 when we did a study of infant deaths, stillbirths, and maternal deaths among all socio-economic groups in metropolitan New Orleans. The data from this study indicated a marked relationship between the fertility variables and the mortality variables. We observed a significant difference in the causes of death between the lower socio-economic group and the middle and upper socio-economic groups. We noted that an estimated half of the women in the lower socio-economic group who had experienced a stillbirth or infant death had a recognizable health problem pre-existing conception. The high-risk factor seemed to contribute disproportionately to the very high rate of infant mortality, maternal mortality and stillbirths occurring among the poor. We estimate that 26 percent of the women 15-44 years of age are within the lower socio-economic group in the city of New Orleans. This group though comprising about one-fourth of the women in the reproductive age groups contribute 56 percent of the live births, about 88 percent of the pregnancies out of wedlock, 68 percent of the births to women under nineteen, 72 percent of the stillbirths, 80 percent of the maternal deaths, and around 68 percent of the infant deaths. All of these events are associated with and affected by fertility practices and especially with the practice of family planning. The data from our studies suggested that the mortality variables among the indigent were related to the lack of utilization of existing contraceptive technology. Although this data is from New Orleans it reflects similarities of many other metropolitan areas.

Other studies revealed a lack of information concerning basic reproductive physiology, the ovulatory cycle and effective means of contraception among all social classes in metropolitan New Orleans. We found that about 90 percent of the lower socio-economic males and females did not understand the most basic concept of the relationship between the period of ovulation and fertility. We also found a marked lack of practice of effective means of contraceptive technology. Many couples were not practicing contraception because of the lack of information about effective contraceptive methods. This lack of information led to contraceptive practices ranging from aspirin tablets in the vagina, diet cola douches, to saran wrap condoms.

These studies and experiences led to the formulation of the hypothesis that the failure of the indigent population to control fertility effectively was caused by lack of access to health services which would have provided family planning information and services and an inadequate understanding of basic reproductive physiology and contraceptive methodology.

In the course of our first year's research, it became obvious that a family planning clinic was needed to serve as a research laboratory and as a demonstration program. Lincoln Parish (county) was chosen as the site for these purposes. The four parishes (counties) surrounding Lincoln Parish were chosen as the control parishes.

Our first step was to study the Lincoln Parish population. On the basis of the study findings, we initiated actual clinic operations in Lincoln Parish in September, 1965, with all program phases in operation by March, 1966. At the end of three years, 74 percent of all medically indigent patients still living in the parish were active in the program. From the Lincoln Parish data, indications were that an adequately designed family planning program would be utilized by the majority of indigent families.

Some of the changes that have occurred in Lincoln Parish since the initiation of our family planning program are very interesting. Keep in mind that the following are data based on small numbers of observations. However, between 1964-1968 we have observed a decrease of indigent births of 25 percent in the four control parishes and 44 percent in Lincoln Parish. During this same four year period, another interesting change occurred in all illegitimate births in women who have had a previous pregnancy. In the four control parishes the decrease was about 12 percent while in Lincoln Parish we have seen a decrease of 50 percent. Among the out of wedlock births, it is unusual for us to see a birth that is not associated with the first pregnancy of a teenager.

The Lincoln Parish experience gave us sufficient experience in offering family planning services to indigent women that we designed and initiated a family planning program in New Orleans. In October, 1966 the plan was initiated with the formation of a private non-profit corporation designated as the agency responsible for implementing the service aspects of the demonstration program and coordinating the efforts of other agencies which cooperate with the program. From October, 1966 through April, 1967, two major classes of activity were necessary. The first was to evaluate existing resources among participating agencies and to develop the mechanisms of coordination necessary between the various agencies and the program. The second was to secure funding.

The New Orleans plan allocated responsibilities to several agencies who would be actively engaged in program implementation. Some agencies undertook primarily to provide personnel and/or facilities for use in the program (e.g. Charity Hospital; Tulane and L.S.U. Departments of Obstetrics; the Health Department; O.E.O. Neighborhood Centers); others carried out related educational activities (e.g. Board of Education); still others agreed to refer prospective patients (e.g. Departments of Health and Welfare). Some organizations gave needed advice on professional and moral problems (e.g. medical societies, pharmaceutical associations, and religious groups). The corporate mechanism was also responsible for securing funds for implementing the Orleans Parish program design. We found it a necessity to depend on a combination of funding sources -- foundation funds, federal funds, state and local funds.

The corporation is the agency responsible for the development, implementation and coordination of family planning services in the State of Louisiana. This mechanism allows us to gather information necessary for internal decision making in program operation and external decision making in program development and funding. It provides the administrative capacity to deal with over 680 federal, regional, state and local agencies which are related to the program at the city, county (parish), regional and national level. It also affords an instrument for the use of systems analysis, time effort studies, automated data processing and fiscal processing. The point is, we looked very hard at the problem at hand, the resources and facilities that were available, and then developed a mechanism that allowed us to respond to the situation with administrative cohesiveness and flexibility. As a result, family planning and maternal health services have been offered to over fifty thousand families of the State of Louisiana and a mechanism has been established to delivery services to the balance.

Modern management techniques are essential to the development and implementation of effective health systems. In our program we have identified 49 variables which we think are necessary to put a specific program into operation.

Each one of these variables (and several alternatives) have a separate time line which allows for planning, evaluation, accounting, and management of supportive services. Through the utilization of management skills, each one of the variables is initiated with efficiency and predictability. A major challenge is to bring modern management techniques into the delivery of health care systems without dehumanizing the services.

The Orleans Parish program became operational in July 1967 for the New Orleans standard metropolitan statistical area. In October 1967, we began operation in Alexandria, a city of 115,000. The Baton Rouge (population 250,000) program became operational in November 1967. Thus, initially our priorities for program implementation were determined by analysis of where the largest number of people lives, modified by the availability of funding in the various regions. In August 1967, the Webster Parish Program (a program comparable to the Lincoln Parish Program) was initiated to test how rapidly all stages of clinic operation could be phased in. By February 1970, we were able to provide, in a coordinated fashion, the availability of family planning and maternal health services, interconceptional care, an annual physical examination, infertility genetic counseling and a cancer detection program for the entire lower socio-economic population in the State of Louisiana. The development of systematic, workable programs is vital for the implementation of effective community-wide family planning services.

During the first two years of clinic operation (July, 1967 - June, 1969), the Orleans Family Planning Clinic admitted 17,459 new patients into the program. By June 30, 1970, we predict that the Orleans program will have involved 25 thousand patients. In the entire state system, we are now receiving new patients at the rate of 3,500 per month and carrying out revisits at the rate of 20,000 per month. The retention rate in the Orleans Parish program is paralleling the 74 percent that was seen in the Lincoln Parish program. Our experience has indicated that while preserving a high standard of medical care and respecting the right of free choice of every patient effective and large scale services can be implemented. In addition, the results in Louisiana indicate that there is not only a willingness to accept family planning but a very strong desire for these services among the lower socio-economic population when they are offered with dignity and respect. If services are made available to the lower socio-economic segment of the population, we believe that similar levels of acceptance can be achieved throughout the nation. It seems that the ultimate problem in the utilization of family planning services has not been in the patient but in a lack of an effective delivery system.

We make no claims at this time as to the ability of our program to reduce fertility rates. We are only saying that new approaches to program design and administration can produce results in terms of involving and maintaining patient populations. We are, however, carefully monitoring the impact which the demonstrated levels of participation are having on fertility as well as health variables and we will report on our findings in due course.

Once a program design has been agreed upon, then funding must be secured. Thus, it is essential to understand thoroughly the tedious details of pertinent legislation and funding mechanisms in order to put together a comprehensive family planning program. Frequently it is necessary to use many different sources of funds. In Louisiana we have gone to an array of funding sources in order to initiate and maintain our program. Our funding resources have included the Office of Economic Opportunity, the Department of Health, Education and Welfare, the Department of Labor, state, local and private sources. One of the major problems that we have had lies in the multiple beginning and end dates with

the various program years. The problem is further complicated when you are dealing with different agencies who have different guidelines. Complexities of this nature make it very difficult to initiate a comprehensive program. If there are geographic or service overlaps of grant, it is important to establish a coordinating body to see that maximum use is made of the financial resources.

In a typical month, the amount of funds available for direct operating costs vary according to the type and location of a program. Since some grants allocate funds for direct operating costs and some do not, the general administrative overhead is not equitably distributed through a program. Thus, particular funds for patient services, manpower development, data analysis and program development vary according to the granting mechanism. With regard to the implementation of services, this situation can create some very interesting organizational problems. In order to alleviate this type of problem, it is important that each program component be composed of patient services, administration, education, research and demonstration, program development, program maintenance, and training. It is necessary to plan and evaluate in terms of the defined role for each program component.

Artificial planning restraints are placed on an organization when the mechanism of funding depends on annual Congressional grants. Occasionally the planner does not know until April or May what the last July's budget offered. Artificial planning restraints of this nature create major problems at the operational level of a health delivery system. Another problem arises when an uneven response to a specific need is created by fragmented resources. Logically it seems essential to take the total available resources and produce a uniform response to a specific need.

The federal share and non-federal share is a major problem to most coordinating agencies. Most agencies have difficulties in raising their share of the matching funds. When more funds are made available through federal grants the same situation exists because the coordinating agencies still have problems in raising the matching component. A change in matching fund requirements could offer a breakthrough in the implementation of family planning programs to patients who do not currently have the services available.

Past and continuing studies indicate that family planning is a positive concept, giving individuals the information, advice and services necessary to plan the conception of a child under circumstances which will give the product of that conception an optimal opportunity to develop his physical, intellectual and emotional potential as a human being. A nation must concern itself with the major obstables which prevent attainment of family health and stability necessary to foster the optimum development of the child. The primary major obstacles to family health and stability which exist in our society are: 1) maternal and infant mortality; 2) the unwanted child; 3) the high risk mother; 4) criminal abortions; 5) illegitimacy, particularly among teenagers; 6) prematurity; 7) mental retardation; 8) and the lack of adequate nutrition. The reduction of these obstacles requires the incorporation of family planning into existing health services.

Family Planning is a valid health measure which is absolutely crucial to all families in this country, particularly those in the lower socio-economic segment of the population who are suffering most from the lack of information and services which will grant them the power to control their fertility. Our studies indicate that unless this power is made available to the lower socio-economic group, we can anticipate much difficulty in solving the major obstacles to the attainment

of family health and stability. For this reason, family planning must be a part of the health delivery system.

If one seriously considers the magnitude of human reproductive wastage, and the importance of producing healthy babies, one is struck by the small amount of literature available. In general, most of the work in the field has measured the effect of only one variable such as age at which pregnancy occurred or the number of pregnancies experienced, against such rates, as stillbirths, infant mortality, or prematurity. If we accept the assumption that our goal is to eliminate pregnancy associated mortality and morbidity, we must examine those characteristics associated with reproduction which influence the outcome of the pregnancy.

There are a variety of input and output variables in the reproductive cycle. Relevant input characteristics of the mother prior to pregnancy that should be considered include nutritional status, age, parity, past history, spacing of previous children, marital status, socio-economic factors, hereditary traits, mental health status and pregnancy desire. The possible outcome of pregnancy can include a normal birth, prematurity, perinatal mortality, maternal mortality, criminal abortion, congenital defect, mental retardation, illegitimacy, spontaneous abortion and/or the wanted vs. unwanted child. These outcomes can either be affected or not affected by preventive and curative care. Obviously there are many factors involved and many remain to be recognized. The full picture is not available to us as yet. Therefore it is important to examine the available but limited knowledge.

Data from the British Perinatal Mortality Survey indicated that perinatal mortality rates in mothers over 40 years of age was 104% greater than the Great Britain and Wales national average of perinatal mortality. Pregnant women under 20 years of age had a 23% higher chance of experiencing perinatal mortality than did pregnant women aged 20-24. As another example, the Obstetrical Statistical Cooperative Study reviewing approximately 350,000 births occurring between 1951-1961, revealed maternal mortality rates for mothers aged 30-39 to be twice as high as rates for mothers aged 20-29, or 13,8 as opposed to 6.6 per 10,000.

A study investigating the maternal and infant mortality and morbidity by marital status indicate that higher rates of reproduction wastage occurred among the unmarried. Infant mortality, fetal deaths and prematurity were about twice as high for women who became pregnant out-of-wedlock than for married women. Maternal deaths were about four times as high. In general, other studies confirm these findings for large populations. Certainly many variables have to be considered, but for whatever reasons involved, the infant mortality, maternal mortality and perinatal mortality rates are much higher for women who become pregnant out-of-wedlock than for married women. The high rate of reproductive wastage observed in this group dictate that this society develop acceptable means to prevent the occurrence of the out-of-wedlock pregnancy.

A study by Bishop reported on 16 thousand consecutive deliveries which occurred between 1956 and 1961 suggests a relationship between child spacing and prematurity. Although there were no controls for age, parity, medical complications, or other factors reported, this study illustrates that a spacing interval of more than 23 months showed an incidence of prematurity of 7.8 percent and a spacing interval of less than 12 months showed 18 percent. We cannot be definite about the importance of spacing as such on the outcome of pregnancy, but, the evidence suggests that the combination of factors leading to sequential reproduction within a year is one which is fraught with a high incidence of prematurity,

perinatal mortality, stillbirths and other complications.

It seems to me that from a national standpoint we need a formula to provide adequate maternal care. Prenatal care, nutrition and maternal health services are inadequate alone. These services need to be combined with family planning services which minimally include child spacing, infertility work-ups, genetic counselling, family life and sex education, and general maternal health care. In other words, family planning services must be an integral component in the provision of adequate maternal care. Family planning services are a vehicle to responsible parenthood and a basis for family health and stability.

In conclusion, family planning has been shown to be a scientific, important health measure; a necessity to the reduction of infant, perinatal, and maternal mortality rates; and is essential to the management of many family health problems. In addition, it offers subjective and emotional benefits supportive to family health and fulfillment. Because family planning is a sound medical practice, any family health, maternal and child health, or national health program which fails to include family planning is medically inadequate and cannot be expected to achieve the maximally possible reductions in the following:

(a) perinatal mortality

(b) infant mortality

(c) maternal mortality

(d) complications of induced abortion

(e) prematurity

Any physician who fails to consider family planning in his management of clinical situations exhibiting these specific medical needs is negligent. Any physician who, for any reason, is unable to include this aspect of medicine in his patient management should refer the patient to another physician for such management.

Research is needed to determine the social and political factors which would encourage small family size. These studies must undertake to develop operational programs which are capable of achieving this end but which do not penalize the child as a consequence. Special attention should be given to the development of a national policy which includes not only the lower socio-economic group but which addresses itself to the problem of decreasing the rate of population growth in all classes of our society.

Regardless of the population policy of any given nation, family planning should be included in the medical services and in the national health plan. For instance, a nation wishing to increase its population could achieve an equivalent gain within an allotted time period, simultaneously improve greatly the quality of its national reproduction while improving and sustaining the health of its reproductive women.

Finally, the increase in population and the very severe environmental problems should be our concern. However, we, as medical leadership, should in no fashion be forced into a position so as to swap off any aspect of human freedom, or any aspect of human rights, or sound medical care in the name of environment or in the name of pollution.

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THE AMA AND POPULATION PROBLEMS

Walter C. Bornemeier, M.D.

It is my honor this morning to welcome all of you to the American Medical Association's Congress on Environmental Health. More specifically, to a discussion of the very broad and important subject of The Population Problem and the Physician.

Some years ago, I remember that a nationally known president of a major railroad was quoted as saying, somewhat humorously, that running a commuter railroad would be a lot of fun if it weren't for all the passengers. If the statements of ecologists, economists, biologists and others are to be believed today, we have reached a point where we can say, in all seriousness, that earth would be a wonderful planet if it weren't for all the people on it. And even more importantly, if it weren't for all the additional people we can expect in the next few decades. I'm sure it was Dr. Paul Erlich, the biological ecologist, who said in a television interview that given its present technology, the United States would be a paradise if it had only half of its present population.

All of the warnings that have been given, and all of the serious discussions now under way, underscore the importance of the subjects that will be covered during this Congress. Population as a problem...family planning...fertility control...and the role of health services.

I hope not to intrude too deeply into any of those subjects, since all of them will be covered by people who are much more expert than I. But I do want to offer a few general comments of my own regarding the whole subject. To begin with, when we talk about a widespread program of family planning, we are talking about a tremendous job of public education. Family planning, after all, is a personal choice. It is a matter decided upon by a man and his wife. It is a decision as to whether they will have a baby. Or another baby. I want to see their decision made with a clear understanding of the facts. Consequently, I hope the decision-making process will include the counsel of their physician... or of a social worker...or of some other qualified representative of governmental or private agencies. With that counsel, I want them to be able to make the right decision -- for themselves...for their nation...and even for their world.

A few enlightened people have seen the importance of family planning for many years. Others have only recently recognized it. We must, together, aim now for a day in the near future when every potential parent will recognize it. The explosion of population -- not only throughout the rest of the world, but in our own nation -- is directly related to the pollution of our land, our air and our water. The more goods that must be produced for a growing population... and the more of our resources that are consumed by that population...the greater will be the problems of pollution of all kinds.

We cannot hope to cope with environmental problems unless we can also cope with what perhaps might be the biggest pollutant of all -- the excess population that results when there is no family planning...no population planning. The

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Dr. Bornemeier is President-elect of the American Medical Association.

crowded, unhealthy situations in our cities -- which is worst now in the slums or so-called core areas -- can be improved with family planning. Without it, all of the present problems of the slums -- and the growing problems of all inhabited areas -- will simply continue to get worse. Social problems increase as the size of the family increases, causing overcrowding not only within the individual home but within the neighborhood. Those conditions certainly are a big factor in antisocial behavior. They lead to a feeling of defeatism within the family and within society, and we are seeing more and more every day that it is much more difficult -- if not impossible -- for a youngster to grow up in that kind of environment and become a responsible citizen.

People who now plan their families -- or just let their families happen -- on the basis of emotional needs must be brought to a clear understanding that only the horrors of a worldwide nuclear war hold more promise of human misery in the future than the prospect of uncontrolled, run-away population growth. They need to realize that if the present rate of growth continues, by the end of this century the world will be adding a billion people every five years or less. They must know that within these United States, it took 300 years to reach the first hundred million population. But the second hundred million was reached in only 50 years. And that the third million will be added in just about 30 more years. They must realize, as we do, that most of our present social and economic problems result from the simple fact that while we had three centuries to get ready for 100 million people...we had only 50 years to get ready for another 100 million.

The medical profession is ready to play its important part in the educational program...in supporting the reduction in total birth rate for our nation and the world. In 1964, several years before the problem gained general notice, the AMA House of Delegates updated its policies on population growth to "conform to changes in society and medicine" and to "take a more positive position on this very important medical-social-economic problem." In that year, the House resolved that "an intelligent recognition of the problems that relate to human reproduction...is more than a matter of responsible parenthood. It is a matter of responsible medical practice." It further resolved that "the medical profession should accept a major responsibility in matters related to human reproduction as they affect the total population and the individual family. In discharging this responsibility, physicians must be prepared to provide counsel and guidance when the needs of their patients require it or refer the patients to appropriate persons."

A year later, in 1965, the House took action again, reaffirming its previous policy that "the prescription of child-spacing measures should be available to all patients who require them, consistent with their creed and mores, whether they obtain their medical care through private physicians or tax or community-supported health services."

In 1967, the AMA House updated its policy on abortion. I realize that abortion has not traditionally been considered a means of family planning. Nor is it now. But it is one of the very important social and medical problems brought about by the process of human reproducation, and the AMA determined to move forward. While recognizing that many physicians would never perform an abortion, the AMA accepted the possibility of abortion under these circumstances: when continuance of the pregnancy may threaten the health or life of the mother,

or the infant may be born with physicial deformity or mental deficiency, or the pregnancy results from legally established statutory or forcible rape or incest and may threaten the mental or physical health of the mother, when two other physicians of recognized competence have examined the patient and agreed in writing, and the procedure is performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals.

Furthermore, the House agreed that it is ethical for physicians to provide "medical information to state legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion."

I commend all of you for coming to this Congress. I am confident that there is no subject of more long-range importance to the health and life and well-being of the people of this nation than the subject you are here to discuss. I wish you the very best of luck in your deliberations.

TOWARDS A POPULATION POLICY FOR THE UNITED STATES

Roger O. Egeberg, M.D.

I am supposed to talk to you about "Towards a Population Policy for the United States." Before I do, I think since you are all so interested in the environment, I would like to get one thing off my chest. I have always felt that the more people, the more pollution - and that if we could control population, there would be less pollution. From what I have read recently and from some insights I have gained, I now doubt that this conventional wisdom is necessarily true. We have to approach these as two definite problems, because if we were to accomplish a controlled population -- I know I shouldn't use that word, but I think of it as the outcome of a change of mores that society will elect to make -- then, suppose everybody were able to afford one or two extra cars, a couple of extra power lawnmowers, a number of extra air conditioners, and all of those things which would probably add to pollution. If that happened, then population control would not control pollution at all. So we have two problems. They do relate in one sense, but we have to be very much aware that they aren't causally related. You might triple the population of Africa, and you wouldn't have the same population or pollution problem that we would have here.

I think when Dwight Eisenhower was President, he said that he didn't think the subject of population had much to do with government. In fact he put it a lot more strongly than that. Later on, though, he changed his mind and even joined the board of one of the organizations that has been working on population. Then President Kennedy, I think, looked at it from an international point of view, and said if the U.S. received requests from foreign countries for family planning aid that we should answer them.

President Johnson fielded a number of questions and came out with an increasing interest in this subject. But it wasn't until President Nixon had the courage, on the 18th of July 1969, that we got a definite national policy. The President's Message on Population opened the door, and since then, a tremendous number of things have happened, and as you are all aware, we have moved forward rather fast. I think it would be pertinent to read the last paragraph of President Nixon's statement: "When future generations evaluate the record of our time, one of the most important factors in their judgement will be the way in which we have responded to population growth. Let us act in such a way that those who come after us, even as they lift their eyes beyond earth's bounds, can do so with pride in the planet on which they live, with gratitude to those who lived on in the past and with a continuing confidence in its future." The President talked about the 5 or 6 million women in this country who want contraceptive help but have not been able to get it. They either don't know about it, which has become increasingly doubtful, or, they don't think they can afford it, or it isn't available in a way that they can use it. So, the official governmental policy was, to start off, to take care of these people. We have increased the money for research at NIH. We have increased the money for service at the Health Services and Mental Health Administration, and we have a schedule of so many per year aiming to make family planning services available to about 5 million needy women by 1976.

Now I come to something which may be the way policies develop or may be the way they fall flat on their face. What have we done beyond that point?

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Egeberg is Assistant Secretary of Health and Scientific Affairs, Department of Health, Education, and Welfare.

I was asked to speak at an annual meeting of Planned Parenthood and I felt that I would like to go a little further than the President, possibly as a balloon, but possibly to express how I personally felt. So, I brought up the term "population control" and explained that I felt this was an ethical, moral affair. We are taught from infancy that the prince and princess marry and live happily ever after in all the fairy tales, and that happily ever after seems always to include a lot of children. The movies have kept that up; so have television and novels. Maybe if we could approach the question of what we really believe, we might free a lot of people from the need to feel that they have to get married. There could be quite a few people, male and female, who would rather lead a single life if society would accept them in the same way it accepts married people. And again, quite a few married people might feel a little happier if society did not expect a child or two or three from them shortly after they were married. Now you are all aware of these things; they are habit patterns. They are mores handed down probably from a time when society and human nature required that kind of approach. We have five years in which to start doing something else, to get under discussion in all parts of this country the question of what is appropriate for population, for individuals, for families, to discuss this thing in great depth. I have confidence that if the people of this country discuss it and if they face the population problem honestly, we will probably come to a relatively stable population. But not if we don't discuss it, if the young people don't discuss it, if people don't discuss it at all levels. This was the main thrust of the statement I made to the Planned Parenthood annual meeting. The Secretary of Health, Education, and Welfare checked my statement and said it was OK. I thought this was kind of an added step. The White House, not the President, but the White House, said it was OK. So that statement gets repeated more and more and very possibly after a certain number of repetitions, it begins to assume the shape of governmental policy, and I think some governmental policies really come along in that way.

Later on, along the same line, I was in New Orleans and in a press conference I was asked my feelings about abortion. While I didn't have any conversations with the Secretary or the President about abortion, I told the press that I felt abortion was a very necessary and important back-up for contraceptive failure. I personally did not condone its use as a means of preventing birth. That seems a little callous to me. But maybe I am old fashioned. I got quite a few letters, but I get letters on both sides and I think that these two incidents do two things: (1) they show you that we are living in a time when our attitudes towards many things, not the least of which are contraception and abortion, are changing very rapidly; and (2) that this is a time when public policies can evolve from having people say things they believe and if they seem to ring true have other people of integrity or earnest feeling repeat them. I have the feeling that such incidents help change the attitude of the Administration or help evolve it on the question of where we are going on population control.

I think probably even though you may know more about it than I do, I ought to say a few words about the oral contraceptive. I won't burden you with the statistics. We did go to England to see theirs, and we are still studying some of the British results. I don't think I need to compare the dangers of the pill with the dangers of abortion or pregnancy or delivery because I am sure you know them. I think you should probably have a few words from me about the insert that will be, in all probability, in each dispensed package of the pill. You may think that physicians have lost a brithright, and maybe we have. But, I don't believe there is much that could keep us from losing

that particular birthright. I recall that President Kennedy, in a message to the Congress on consumer's rights sometime in 1962, stated that the consumer has a right to safety, a right to know, a right of choice, and a right of protest. This statement has certainly been accepted very warmly by the consumers, and the consumers are most of us. It has also been accepted by Congress.

I look back to when I was in medical school, and our older professors used to say to us, "Now there are a lot of new ideas coming along that you should explain to the patient. But let me advise you, tell the patient as little as you can." I am sure that any physician my age got this same kind of advice. "All they need to know is when to take the pill, what to eat, and how to do it, but if you start trying to explain things to them, it is going to take you forever, and you are just going to make them worry."

About that time columns were appearing in the papers causing people to ask embarrassing questions. The younger people--I hate to tell you how long ago this was, 40 years or more--the younger ones said there was a new era coming and that doctors were going to get a lot more patient cooperation if they explained what they were doing for their patients. This attitude appealed to me and I am sure that beginning with my generation of graduating physicians, most doctors have tried to explain as much as possible to a patient so that the patient would have the reasons for cooperation. We are probably now going a step farther in this evolution. Whether we like it or not, patients are going to know more and be in a position to use their own judgement on many things. This change will give the medical profession some problems because it seems to me that one of the first things we should say to a patient is: "do you know for example, that 7 percent of all gastrointestinal hemorrhages are caused by aspirin?" We have got to start making a list--I've been doing this for years but no one has picked it up yet--a list of relative dangers of things, because to pick out one thing--the pill--and say that three women out of the one hundred thousand who take it are going to die, and leaving that statement out there alone is to my mind misleading on the public. Because, they should have that risk related not only to the environmental factors that you people are aware of, but to a host of others. Probably ten times as many people have been killed by eating salt as will ever be killed by the pill. The antibiotics, despite their immense value, have caused death by anaphylaxis and other means. We have to start describing what one's chance is of getting where he is going when he gets into the car. We have to have some form of risk relativity available to the people. That is perhaps a little bit off the point, but we may be the ones who are at the beginning of a new era of giving the patients a great deal more information than they have been receiving.

The package insert on the oral contraceptive tries to put into perspective the risk that users of the pill have a need and a right to know. The word rare is used in describing the complications that might come from use of the pill. This word rare is a red flag to a lot of people. I don't know what they think rare is, but if one person out of two thousand has to go to the hospital for thromboembolic phenomena, is that rare? If you had a chance to bet on a horse that was a 2000-to-one shot would you take it? Or would you call it rare? Certainly, in my estimation, this chance is rare. This is one of the issues that I think we are going to have to discuss with Congress. We are all facing the fact that Congress is increasingly taking over many prerogatives in the health sciences that we physicians used to consider ours. You are going to hear and read a lot about this and similar topics in the future.

I think I should mention both abortion and sterilization. I told you what I feel about abortion. It seems to me that another back-up measure that we have long ignored and which will probably come in for a great deal more thought is sterilization. I understand that approximately 2 million men in the U.S. have had vasectomies. I was surprised to hear this figure. Right now if a man decides he would like to have a vasectomy, he may have a hard time getting a doctor who feels that he could do it without having the threat of a future law suit on his hands. It seems to me that an important and helpful step would be taken if the American Medical Association could come out with some guidelines on both abortion and on the status of vasectomy. Certainly, if you have guidelines coming out on abortion, I imagine they might be broad and long. They would have to address the subject of safety. Recent statistics from England indicate that abortions done under what they felt were the best circumstances resulted in 22 deaths per one hundred thousand women who were aborted. That is about the same as the maternal mortality rate in the U.S. Thus, you have some philosophical questions to answer. But you also have some very practical and extremely important and useful immediate objectives that you could help us with, and I hope you will tackle them.

The President last July asked the Congress to authorize the establishment of a Commission on Population Growth and the American Future. The Congress did so, and the Commission is now being established under the chairmanship of Mr. John D. Rockefeller, III. It may be that Mr. Rockefeller and his colleagues will produce a report that will lead to the formulation of a stated national policy with respect to the rate of our growth and the distribution of our numbers. If that should happen, and if such a proposal should be embraced by the American people, than we will have a population policy in the ordinary sense of that term. In the people of this country to exercise free will in the planning and spacing of their children. It is the responsibility of government and the medical profession to assist the people in the wise exercise of that choice. That is always our job. When great changes are made, they are made by society. We have a very broad and deep responsibility to help society by educating them so that they can make a wise choice. I know this is what you are going to help start us towards. I thank you, and I appreciate the opportunity to talk with you.

ON POPULATION PROBLEMS IN THE UNITED STATES

Philip M. Hauser, Ph.D.

The United States, in the course of her brief national history, has experienced as has the whole world, four developments which have profoundly affected our ways of thought, our values, our social institutions, our behaviorisms, and the environmental envelope in which we live. These four developments the product of man's culture building activities may be set down as the population explosion, the population implosion, the population displosion, and the accelerated tempo of technological change.

Most everyone now understands what is meant by the population explosion. It refers, of course, to remarkable acceleration of the rate of world population growth particularly during the modern era. By the population implosion, I refer to the increasing concentration of the world's peoples on a relatively small portion of its surface, a phenomenon known better as urbanization or metropolitanization. By the population displosion, I have taken an archaic word out of the dictionary to refer to the increasing heterogeneity of peoples who share not only the same geographic locale but increasingly the same life space--social, political, and economic activities. By heterogeneity, I am referring to the diversity of peoples by culture, by language, by religion, by value systems, by ethnicity, and by race. The accelerating tempo of technological change requires very little further elaboration to this audience. These developments are interrelated. The population explosion has fed the implosion; both have fed the displosion; and technological change has been both antecedent and consequent to the other developments.

I set my basic thesis before you at this point: man, as the only culture building animal on this earth, has generated these developments. He has, by reason of these developments, created a 20th Century demographic and technological world. This 20th Century demographic and technological world has precipitated unprecedented problems--physical, economic, personal, social, and government. The physical problems include air, water, and general environmental pollution; traffic congestion, air and surface; slums; and inadequate quality as well as quantity of housing. The economic problems include poverty; unemployment and underemployment; the exploitation of the consumer now leading to a consumer revolt. The personal and social problems include drug addiction and alcoholism; delinquency and crime; the revolt of youth, characterized at one extreme by those who cannot cope and adopt forms of retreatism--the "hippie"--and at the other extreme by the activists who in frenzy attack the police, beat their heads against the walls of the Pentagon, or now happily or unhappily blow themselves up with dynamite intended for the destruction of the "establishment." They include, also, the revolt of the blacks in the United States; and what may be another revolution during the 1970's, the revolt of women. The governmental problems include the fragmentation of our metropolitan areas with central cities requiring increasing public services while their tax bases diminish; problems of intergovernmental relationships--on the local, the state, and federal level; problems of interventionism in economic and social affairs.

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Hauser is Director, Population Research Center, University of Chicago.

The point is that these contemporary problems including "the urban crisis," which encapsultates most of them, may be better understood if viewed as frictions in the transition still under way from "the little community," to use the anthropologist Redfield's language (the preindustrial type of society) to "the mass society," to use Karl Mannheim's language (urbanism or metropolitanism as a way of life). As a further element of my thesis, let me say that the chaos that now characterizes much of life in this nation, and for that matter, the world, is likely to grow a lot worse before it gets any better. This is true partly because man is trying to deal with the problems of the 20th Century demographic and technological world he has created with 18th and 19th Century value systems and 18th and 19th Century governmental processes. We are trying to deal with our contemporary problems with slogans inherited from the dead past, including such shibboleths as: "that government is best that governs least"; "each man acting in his own interest, as if guided by an invisible hand, acts in the interest of the collectivity"; "caveat emptor, let the buyer beware." We are trying to deal with our problems with such outmoded procedures as those utilized by the Congress of the United States. Moreover, the Congress is often tied into knots by reason of seniority rules and the one party system in the South, which has given that least developed part of this nation a stranglehold on the entire legislative process. The Congress is still dominated by 19th and 18th Century values in its often futile attempts to deal with our 20th Century society so that it cannot move forward. Having stated my thesis, let me proceed to document it. To begin, let us summarize the developments I have described as they have taken place in America.

Let us consider first the population explosion. When our first census was taken in 1790, we were a nation of under four million people. By the 18th Decennial Census in 1960, we had become a nation of 180 million. When the 19th Decennial Census results are published by December of this year, we shall be a nation of about 205 million. In our relatively brief history as a nation, we have experienced more than a 50-fold increase in our population.

Consider next the population implosion. When our first census was taken in 1790, 95 percent of the American people lived in rural places--on farms or towns having fewer than 2,500 persons. Only five percent were urban. There were only 24 urban places in the entire nation, and only two of them, New York and Philadelphia, had populations in excess of 25,000. This was the agrarian setting in which the Constitution of the United States and the Constitution of most of the states were written. I want to stress this fact because by the 18th Decennial Census in 1960, 70 percent of the American people lived in urban places, and 63 percent in metropolitan areas--central cities of 50,000 or more and in general the counties in which they were located. Both of these percentages will be further increased when the 1970 Census results are published. Now I come to this interesting fact which helps account for the urban crisis and the chaotic condition in which we live. It was only as recently as 1920 that this nation became an urban nation, in the sense that more than half of our people lived in urban places. The 1920 Census reported about 51 percent resident in urban places. It is, therefore, in this year, 1970, that the United States is completing her first half century as an urban nation, and a half century is a very short period of time in the life of a nation. Thanks to many of you assembled here, it has become a relatively small portion of even one lifetime.

Next, let us examine the population displosion. The United States, of course, has been one of the most polyglot nations on the face of the globe. Everybody here has come from some place else. As a matter of fact, it was in this City that President Franklin Delano Roosevelt emphasized that point to the dismay of the Daughters of the American Revolution, when he greeted them as "fellow immigrants" some years ago. As recently as 1900, little more than half of the people in the nation were native white of native parentage. The remainder were either foreign born, second generation immigrants (that is, the children of the foreign born or mixed parentage), blacks, or members of other minority races. As recently as 1960, 30 percent of the people of this nation were still either foreign born, second generation immigrant, black, or members of other races.

The population displosion, referring to the increased heterogeneity of people sharing not only the same geographic area but increasingly the same life space, has also generated many frictions. On a global basis, this is what helps to explain the problems that are now manifest in Northern Ireland between Protestant and Catholic; between the Moslem and the Hindu in India and Pakistan; within India among the diverse linguistic groups of Hindus; between white and black in the Union of South Africa, Rhodesia and the United States of America; between tribal groups within Africa. Diverse people sharing the same physical and social life spaces on an egalitarian basis is a relatively recent phenomenon in the history of man, and man is still trying to learn how to live in such a situation.

In the United States the great internal migration of blacks from the South to the North and the West has generated the most intense form of tension arising from the population displosion. The problem has been exacerbated by the tremendous transformation of blacks in this nation from a people 73 percent rural as recently as 1910, to 73 percent urban by 1960, one of the most dramatic transformations in the way of life of any people in the history of man, all within half a century--less than one lifetime. Moreover, blacks were poorly prepared for the tremendous transformation which they have undergone. As recently as 1960, 23 percent of all black adults, those 25 years of age and over, were functionally illiterate, had less than five years of schooling and were on the whole unable to read a newspaper with ease in metropolitan America.

Let me next devote a little time to what is in prospect. What lies ahead? Certainly all three of these developments, the explosion, the implosion, and the displosion, will be exacerbated in the generation or so which remains between now and the end of the century--in the next 30 years.

Let us deal with the total population picture first. Short of the catastrophic, which cannot be ruled out because after all, man does possess the hydrogen bomb, we are almost certain to add 100 million people to the population of this nation in the next 30 years. Even if we were to achieve a net reproduction rate of unity during this decade, that is, achieve a birth and death rate at each age which in some 65 to 70 years would produce zero growth, we would, with present levels of immigration, probably still approximate 300 million by the end of the century. Such an increase certainly represents a tremendous addition to our present population and has grave implications for the exacerbation of the types of problems to which I have already referred.

If we do add this 100 million people, they are likely to continue to become increasingly concentrated by reason of the population implosion. It is possible that 100 percent of the increment of 100 million Americans in the next 30 years will go into urban areas. In fact, during the intercensal decade 1950 to 1960, more than 100 percent of the total population increase went into urban areas. That is not a mistake in arithmetic on my part. What I am directing your attention to is the fact that between 1950 and 1960, for the first time in the history of this nation, the rural population actually diminished. Conceivably, this could continue to be the case between now and the end of the century because increased agricultural productivity has by no means run its course.

On what evidence can one anticipate an increment of 100 million people during the rest of this century? To begin with, we are now experiencing the second post-World War II baby boom which began in October, 1968. That is, for the first time since 1957, the number of births each month beginning with October of 1968, has exceeded the number of births for the same month of the preceding year. The total number of births for the year 1969 exceeded the total number of births for the year 1968. The birth rate for 1969 was 17.7-up from 17.4 in 1968. Moreover, for the month of January 1970, which is the last month for which these data have been published at this writing, the annualized birth rate has gone up from 16.6 in January 1969 to 17.4 in January 1970. This second post-World War II baby boom is the echo effect of the first. It is the product of at least three factors. First, most of our childbearing is done by women 20 to 29 years of age. This group of women, by reason of the first post-war baby boom, is increasing by 35 percent between 1967 and 1975, and will probably continue to increase somewhat for two or three years thereafter. Hence, even if birth rates at each age were to remain constant, or even diminish, there is almost certain to be an increase in absolute numbers of births. For the obstetrician-gynecologist this means increasing markets. A second reason for the second post-war baby boom is to be found in surveys which indicate that young women are still expecting to have about three children per family. Three children per family produces a relatively spectacular growth rate compared with two children. With present mortality, we would have a zero rate of growth in this country if each couple averaged about 2.11 children. A third reason is to be found in the rapidly increasing marriage rate and absolute number of marriages particularly since 1968. The issue of the first post-war baby boom is now rapidly entering into matrimony. The second baby boom would have begun some time ago except for the fact that, for the first time in several decades, the age of marriage has turned upwards and the age of birth at the first child has turned upwards. These changes are partly the result of the first post-war baby boom because that tidal wave of babies is finding it increasingly difficult to find employment in our strained economy and is experiencing high rates of unemployment, especially for those in the minority groups. It is also partly the result of the "marriage squeeze" which refers to the fact that because in our culture ladies generally marry gentlemen about three years older on the average, girls produced as part of the bumper crop of babies after World War II do not have enough mates from lower birth rate cohorts to meet their requirements. In consequence, girls in the post-war baby cohort have had to resort to marrying men their own age or even younger ones. Out of these considerations, I think it highly probable that we will see an upturn in births that may well persist for a decade or more, the duration of the first post-war baby boom.

One of the results of the fluctuating birth rate since World War I superimposed on the secular trend downward in fertility, has been remarkable change in our age structure. I should like to call your attention to some of these changes, particularly in the coming several decades because of their very important implications. For example, consider youngsters 5-14 years of age, roughly elementary school age. Youngsters in this age group increased by 47 percent during the 1950's, after an increase of only nine percent during the preceding decade. This is why our elementary school systems experienced great difficulties throughout the nation. Certainly, the quality of elementary school education did not increase by reason of this tremendous bulge of pupils entering the primary grades. From an increase of 47 percent from 1950 to 1960, these youngsters increased by only 15 percent during the 1960's. They will decrease by two percent during the 1970's, using census projections, likely because of the decrease in the birth rate which began in 1957. By the time we have enough classrooms to meet the requirements of the 1950's, there will be a diminution in the size of the cohort entering the schools. But the number of pupils will go up again by 27 percent during the 1980's.

Consider next the high school age group, 15 to 19. They experienced a 27 percent increase during the 1950's and accelerated to a 42 percent increase during the 1960's. During that decade the secondary schools took the brunt of the tidal wave of babies following World War II. During the 1970's, this age group will increase by only nine percent, and during the 1980's, by only four percent, with present projections. These are remarkable changes in adjoining decades with tremendous implications not only for the schools, but also many other sectors of society. Much has been made, for example, of the recent tremendous increase in juvenile delinquency and crime. Much has been said by various police administrators, federal, state and local, about what a horrible situation we are in because the juvenile delinquency and the crime rate are increasing much more rapidly than total population. But these, of course, are uninformed observations because juvenile delinquency, by definition, is produced by persons roughly 15 to 19 years of age. Even if rates of juvenile delinquency remained the same, a 42 percent increase in youngsters of this age means a 42 percent increase in the volume of juvenile delinquency. We did not increase our police officers nor our various other organizations for dealing with juvenile delinquency by 42 percent during the 1960's.

Let us take the next age group which has a special significance for our economy and society because it is the age of marriage and rapid family formation--the 20 to 24 year age group. In the midst of all the population increase which was experienced in the 1950's, these young adults decreased by three percent, the effect of the decreased birth rate during the 1930's. During the 1960's, from a three percent decrease, young persons from 20 to 24 years of age in this nation increased by 55 percent. They will increase by only 22 percent during the 1980's, again, reflecting the fluctuations in our birth rates. These fluctuations will have an impact throughout our economy and affect the consumption of many goods and services, including medical services.

The age group 25-64, taken as a group, increased by about ten percent during the 1950's, and by eight percent during the 1960's. They may increase by 17 percent in each of the following two decades. Within this broad age grouping it is instructive to observe major fluctuations in specific age intervals. Persons 25 to 29 years of age during the 1950's, decrease by 11 percent, again reflecting the low birth rates and marriage rates of the Depression 1930's. They went up by 27 percent during the 1960's. They are likely to increase by 40 percent during the 1970's, and then

increase by only nine percent during the 1980's. Persons 30 to 34 years of age increased by four percent in the 1950's and decreased by about five percent during the 1960's. They will increase by 52 percent during the 1970's, and by 21 percent during the 1980's. The above data should suffice to indicate that our changing age structure, by reason of fluctuations in our birth rate, will have major impact on the entire economy and society in the coming decades as it already has in the past two decades.

There will be significant regional population changes between now and the end of the century. Without getting into detail about it, let me point out that we have experienced significant changes in patterns of internal migration since about the mid 1950's, particularly as they affect the South, the Northeast, and the North Central states. For example, during most of the history of the United States, the North and the West have been the productive parts of the United States, and the South has been the reproductive part. That is, the South, relatively rural and economically underdeveloped, has had a higher birth rate and a major contribution it made to this nation was the export of human beings to the North and West. Since the mid 1950's, largely because the industrial revolution and urbanization have accelerated in the South, it has become an area of in-migration. It is retaining more of its own people and is attracting people from other areas as well. The Northeast, which up to the mid 1950's was essentially an area of out-migration, is also becoming an area of in-migration. The part of the country in which I live, the North Central states, is now, contrary to its earlier history, experiencing net out-migration. These shifts in patters of migration reflect the significant changes which are taking place in economic opportunity in this nation because human migration is almost always a movement from areas of lesser economic opportunity to areas of greater economic opportunity.

Many other changes will occur. The black population, with a high birth rate and a relatively low death rate, is probably going to double between now and 1990, something on that order, as a result of the urbanization of blacks to which I have already referred. Without time to elaborate, let me point out that the demography of the black in the United States is in many respects parallel to the demography of the people in the developing regions in the world. Both are experiencing high fertility accompanied by decreasing mortality and, in consequence, have high population growth rates. It is perfectly clear, however, that as the blacks achieve full participation in our society and, thereby, gain in education and in levels of living, they will, as the white population before them, reduce their fertility and therefore reduce their rates of population growth.

Let me now turn to a subject I was asked to discuss, the implications of the population changes and, particularly, the relation between population and environmental pollution. First of all, let us focus on the problem of population control. I must say that I cannot be quite as complacent at the prospect for population control as Professor Notestein implied, for the world as a whole; or for that matter even for the United States. On the other hand, I would like to add in the same breath that neither can I become as alarmed as some of the so-called "angry ecologists" whose scare headlines, not to mention television appearances, are frightening people out of their wits. It is rather ironic that demographers should have to disagree with the angry ecologists who are "Johnny-come-latelys" to the field and who in their hucksterist tactics are being rash enough to make alarmist predictions about what will happen during the 1970's. The demographer with experience behind him has long since learned to make projections for the year 2000 or some safe future date. But the relatively young and inexperienced ecologists

who are becoming instant demographic experts are making predictions as close as the 1970's. Some of them are indicating that tens of millions of persons are going to starve to death during the 1970's, and that the air and water will poison and kill tens of millions of additional persons. Such extreme and alarmist predictions may create a credibility gap. There is reason to worry about the boomerang effects of the overdrawn, drastic, Cassandra-like doomsday predictions which, when they do not come to pass, may make people relax. There is no question but that we have tremendous problems ahead of us to control population growth, both in the developing regions as well as in the economically advanced areas; and to eliminate environmental pollution and prevent ecological disaster. But the solution of these problems is going to take patience, persistence, and continuous effort. It is not going to come about by spectacular "Earth Day" demonstrations, or Cassandra-like predictions on late T.V. entertainment shows. It is important that short-run public anger and zeal do not turn into long-run public apathy.

It is only a partial truth to say that the population explosion is the cause of environmental pollution. If we were to have no more population growth, we could still experience tremendous increases in pollution. There are two or three aspects of the pollution problem on which I should like to make quick observations. Another only partially true statement that is making headway is that pollution is a product of the free enterprise, capitalistic system. Well, in one sense it is. But if one is going to balance the scales, one must also say that pollution is also a product of the socialist system, because it, also, is accompanied by pollution. The reason we have pollution, in the capitalist and in the socialist economies, is that in neither type of economy has there yet been public agencies created which have enough authority and enough funds to protect what might be called "common property resources," the air and the water and the land that belong to everybody. As long as both types of economies continue not to change their priorities and remain unprepared to pay the price of antipollution measures they will continue to suffer pollution.

Another interesting subject that requires attention is the activities being organized to achieve "ZPG," zero population growth. To believe in zero population growth is the equivalent of believing in the law of gravitation. Given a finite globe, it will inevitably come about. The only question is by what means and with what timing. It is rather amusing to see some of the young, by that I mean people under 30, using zero population growth as a rallying slogan. When we achieve zero population growth, then with reasonable assumptions on expectations of life, we would have a population with an average age of 40 years in contrast with the average age of some 27 years now. This, to the delight of us oldsters, might solve the youth problem. The proportion of youngsters under 15 approximating 28 percent in this country now and over 40 percent in the developing regions, would drop to less than 20 percent; and the number of oldsters, those 60 and over, would increase from 15 percent to about 24 percent. Zero population growth, as an objective, is to be sure, desirable but it is also inevitable. To those who would hasten it, I can only add that there are high prices to pay, especially if its achievement is hastened. The price may perhaps be greater than what this nation or other nations are prepared to pay.

The problem of decreasing birth and growth rates is still before us as well as the developing nations. In the United States, we have come a long way, though voluntary methods, towards achieving control of our fertility and growth rates. The

average number of children per family in this nation in 1800 was around six. Cohorts now completing their fertility are averaging around three children. If one analyzes present age specific fertility rates, and assumes that they will persist the average number of children per completed family would be about 2.5. We have decreased the number of children per family certainly by 50 percent in the course of our national history on a voluntaristic basis. In consequence, I disagree with what Senator Tydings said, about our not having experience with what voluntarism can accomplish in fertility reduction. In this nation and in the western world in general, we have to do but little bit more of what we are already doing. We are not more than half to one child per couple from a zero rate of growth. But it is to be borne in mind that it will take 65 to 70 years to achieve zero growth after our age specific birth and death rates change to imply replacement growth.

Since zero gorwth is inevitable, the only question really is whether it will be achieved by nature or by man; and if by man, whether it will be achieved by relatively rational and desirable methods or relatively irrational and undesirable methods. If it is achieved by nature, the method will be pestilence and famine--disease and starvation. If it is achieved by man, then undesirable methods, and I want to stress "undesirable," would include war, homosexuality and cannibalism. On war as a method I should say that up to this point, the military has been completely inept and ineffective in contributing to diminished world population growth. During World War II the bloodiest of our wars so far, world population increased by several hundred million. But now there is hope. With the hydrogen bomb, the military conceivably could be an effective instrumentality in the control of population growth. On homosexuality, I should state that my intensive studies indicate it is never associated with a very high birth rate. Finally, cannibalism affords interesting opportunities, particularly because of its nice symmetry. The population goes down as the food supply goes up, and econometricians can have much fun fitting rectangular hyperboles to achieve different points of equilibrium under varying assumptions of who shall be eaten.

These are, I stress, the irrational and undesirable methods. The rational and desirable methods include, three alternatives that are often admixed but are quite different--conception control, birth control, and population control. Conception control referes to all the means whereby conception is prevented: behavioral, mechanical, chemical, physiological and surgical. Birth control refers to conception control plus abortion which is still the most widely used single form of control of births on this globe. It is estimated that there are 40 to 60 million abortions each year. Population control involves the relationship between fertility, mortality, and migration, and the social and economic policies and programs which would affect these components of growth. No nation in the world yet has population control but in my judgement it will come, and has to come. Economically advanced nations depend primarily on conception control supplemented by abortion. The developing nations of the world to the extent that they have any control depend mostly on abortion, although conception control is beginning. Despite popular misconception, were there adequate conception control, there would be no need for abortion.

In respect to what is going on in the developing regions in efforts to decrease birth and growth rates, I would like to take a position intermediate between what I feel is a certain amount of complacency, as conveyed by Professor Notestein, and the

angry protestations of the present vociferous ecologists. I think the position I take lies a lot closer to Notestein than to the angry ecologists. I am much concerned about the fact that we have yet to see the first nation with a population mired in illiteracy, poverty and traditional behavior that has managed to reduce its birth rate. I think the converse of that proposition tends to be true: we have never had a population with increasing literacy and higher levels of living that did not decrease its birth rate.

The examples of successful fertility control in Asia--Hong Kong, Singapore, Taiwan, Korea are all nations in which the birth rate began to go down before there was any significant national family planning activity. Without question, the expanded family planning programs in these nations accelerated fertility decline. But I have yet to see any nation in the world in which fertility decline was initiated by a national family planning program. In fact, this is the $64,000 question. Can India and the other developing nations induce fertility decline even while their populations are mired in poverty, in illiteracy, and are characterized by traditional behavior? This is a major question that confronts mankind, and I find little empirical evidence to expect significant fertility declines in the developing nations between now and the end of this century--little more than one human generation from now. Change on this front will be measured in human generations not in years or in decades. In fact, on the world outlook, I would say that the prospect is that between now and the end of this century we shall see more, not less social unrest; greater not lesser political instability; and greater, not lesser threats to world peace. We are likely by reason of these considerations, witness increased, not decreased, expenditures for the military and higher, not lower taxes.

I close now with some brief reference to the problem of excessive population growth and the role of the physician. As you are quite aware, the medical profession must take a major responsibility for inflicting the population explosion upon mankind. After all, you did make some contribution to the reduction of mortality, though I should like to point out that as recently as 1900 a person who went to a hospital still had a 50/50 chance of dying from a disease he contracted while in the hospital rather than from his own disease. I should also like to point out, contrary to what Senator Tydings had to say, that the medical profession did not pioneer in advocating or supporting the family planning movement. I join with the Senator, however, in commending you on the action taken over the last several years. I am afraid that history records that the medical profession had to be dragged into advocating birth control, and is only now beginning to consider liberalization of restrictive abortion laws. The relatively late medical participation in efforts to dampen fertility and growth rates is, of course, much better than no participation. Welcome aboard!.

FAMILY PLANNING - U.S. PROGRAMS

GARY D. LONDON, M.D.

Being asked merely to follow Dr. Guttmacher on a program would be difficult enough, but being asked to comment on his speech is one of the most challenging speaking assignments I've ever been given. In discussing his presentation on family planning programs in the United States, I will attempt to narrow the task by limiting my remarks to activities of only the past five or six years - years in which family planning has moved from the realm of passive acceptance by the Federal Government into a stature of national priority for which national goals have been established by the President.

Listening to Dr. Guttmacher's fascinating review of the development of U.S. family planning programs over the past sixty years, I find myself a bit sorry that I missed the excitement of those early challenging years. On the other hand, considering the relatively slow progress of the field for the first fifty of those years, and the more recent explosion of interest and activity, it would appear that we are now in the midst of its most exciting phase.

As I discuss now those programs cited by Dr. Guttmacher which have developed during this period, I ask you to consider a question: Why is there currently such strong and vocal support for programs which allow an individual to limit his reproduction? The answer to this question is not only the basis for the recent progress which has been made, but will also shape the direction of all future activity in this field. There are at least two possible answers to this question. One is that our collective social conscience has finally prompted us to acknowledge that no individual in society should be denied such a basic human right as that which allows him to determine for himself the number and spacing of his children. The other is that society's sense of self-preservation has begun to demand that some limits be placed upon the runaway growth of population. These two possible divergent answers to the same question give rise to questions as to whether the Federal Government is involved in and supporting a program of voluntary family planning or a program of population control. In attempting to answer this question, let's look now at the specific programs and activities of the Federal Government over the past few years.

As Dr. Guttmacher pointed out, although the United States Public Health Service voiced its approval of family planning as far back as 1942, this statement proved to be of no practical significance for the following two decades. In fact, it was less than six years ago that the Federal Government, through the Office of Economic Opportunity, (still not through the U.S. Public Health Services,) made its first direct grant for a family planning project. This was a modest grant of only $8,000 to the small Texas community of Corpus Christi. But this first, unpublicized, exploratory effort of OEO to bring what the United Nations has defined as a "basic human right" to poor women in that small Texas city opened the way for this year's Federal investment of more than $40,000,000 in family planning services for the poor.

The Office of Economic Opportunity entered the family planning field rather obliquely. It did not set out to specifically develop a family planning program, but had broader interests. OEO's concern was with broad problems of education, employment, health, housing and human rights. A point of concern

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Dr. London is President of Health Systems, Inc., and a Consultant to the U.S. Department of Health, Education, and Welfare.

to OEO was that the problems of obtaining a decent quality of life were not of equal magnitude among various segments of our population. Similarly, the problem of unwanted fertility was disproportionately common in some American subpopulations.

It has been clearly shown that there exists an identifiable group of individuals for whom these problems are particularly acute. These are the low income Americans. These individuals face a variety of problems, none of which can be effectively addressed without the ability to space and limit family size. That ability is available to most Americans. Most Americans have access to methods of contraception which allow them to plan their families within the dictates of their own conscience. Americans of all classes and ethnic groups have been shown to want moderate size families, but for the most part the poor have more than they want, have them earlier, and closer together than they want.

Just who are these low income Americans, and how many of them are there? It has been shown that there are approximately 5,000,000 American women, ages 15 to 44, in need of subsidized family planning services. As Dr. Guttmacher pointed out, less than 1 out of 5 of these are now receiving effective family planning help. Closer examination of these 5,000,000 women reveals some possibly surprising characteristics. First of all, 7 out of 10 of these are white. Only 14% are in families whose major source of support is public welfare assistance. Nearly half work at some gainful occupation at least part of the year, and one-fifth are employed full-time. Three out of 5 are married and currently living with their husbands. Three out of 4 have had some high school education, and 4 out of 10 are high school graduates.

The task outlined for itself by OEO, then, was to make family planning services available to these Americans, to assure them the right to decide when and when not to reproduce. That same task was outlined by the President's Committee on Population and Family Planning in July of 1968, and was cited by President Nixon in his July 18 message, not only as a task but as a national goal to be accomplished in the next five years.

One thing is now quite clear. We are at a new stage of development in this field. In the early days (and "early days" is a very few years ago in this rapidly expanding field), the struggle was for acceptance. Family planning was considered controversial and not at all a proper activity for the government. Advocates of governement efforts in this area had to prove to Congress and to the Administration that such efforts were really wanted by the people and that they wouldn't be resented. It was essentially a public relations problem. No one talked about serving all the people in need within any particular period of time; no one knew even how many people there were who needed the service; nor was there even agreement on what constituted "need" in this respect. It was important to get some services into some representative communities and to show that the people wanted them, would use them, and that the services would help them to improve their lives. It mattered only slightly whether the services were coordinated or well organized, or even organized at all; whether they were administered efficiently; or whether there was systematic evaluation and follow-up.

We are well past that stage today. There is not just acceptance, there is overwhelming acceptance. No matter how fast we have increased services, and no matter how much we have increased the amount of funding available for these

services, we have not been able to keep up with demand. We now know with some measure of precision the number and location of the population in need of subsidized family planning services, and the proportion of that population which is currently being served. Much of this information has come from the study mentioned earlier by Dr. Guttmacher which was performed for OEO by Planned Parenthood's Center for Family Planning Program Development. As he pointed out, that study showed that during 1968, less than 15% of all women in need were receiving services. The study showed that there were no identifiable family planning programs at all in 1,872 counties - almost 2 out of 3 counties in the United States.

Clearly, we are not moving as quickly, as effectively, and as efficiently as we should. More people are receiving service, but they still represent only a small fraction of the total population in need. We have learned a good deal about the delivery of services on a comparatively small scale, but we are now talking about a totally different scale - that of serving 5,000,000 women in five years. For a task of this magnitude we must develop far more sophisticated methods to operate in a larger, more complex situation.

But as we move into programs of greater magnitude, it becomes more and more important to clearly define our objectives. We must look openly and honestly at the differences between a voluntary family planning program and a program of population control.

The Federal Government has not initiated a program of population control; rather, its new efforts are aimed only at establishing strictly voluntary family planning services. This is not to say, of course, that voluntary family planning will not effect tha rate of population growth. It has been shown that these programs will have a negative effect on birth rate and thus on population size. In fact, as Dr. Guttmacher pointed out in discussing the Bumpass and Westoff study, it is even possible that the voluntary elimination of unwanted pregnancy could lead to an ultimate stable population size.

On the other hand, to truly test the concept of voluntary limitation of family size, a number of steps must be taken and a number of advances must be achieved. Some of these, which have been listed by Dr. Guttmacher, do not appear to be immediately attainable, such as improved contraceptive technology, or removal of cultural barriers, or even extensive education in human sexual behavior. Others, such as reform of abortion laws, and greater availability of sterilization, could be accomplished almost immediately. There are still immense inconsistencies from state to state, from agency to agency, and even from social class to social class, in the accessability of methods of fertility control, including abortion and surgical sterilization. These inconsistencies must be rectified if we are to achieve our national goals.

As the problem of unwanted fertility has become better known, the search for solutions to the problem has achieved higher and higher priority. As this priority has elevated, the Federal Government has increased its efforts in family planning dramatically. We have all good reason to believe that there will be an even greater elevation of these efforts in the near future.

It seems certain that the Federal Government will be an increasingly active partner in the provision not only of family planning services, but of all other health services. It is important, not only to the success of these efforts, but also for the protection of patients, physicians, and the quality of medical care that physicians assume the responsibility of assuring that

this "partnership" remains just that. The magnitude of the problem and the degree of unmet need demand the contribution of Federal resources. But the nature of the service demands the active participation of physicians. It is only through a partnership of these two resources that we can assure that family planning services are available to all Americans.

FAMILY PLANNING - U.S. PROGRAMS

Alan F. Guttmacher, M.D.

To place this discussion in proper perspective, it is useful to recall that there were no organized family planning programs in the United States 60 years ago. Nevertheless, the condom, post-coital douche, coitus interruptus and illegal abortion were in common usage. There was also much vigorous opposition to birth control, not only by full-time moralists, such as the anti-smut minded executive director of the New York Society for the Suppression of Vice, Anthony Comstock, but by persons in high places, even by a President of the United States.

Diminishing size of American families caused alarm in the early twentieth century. In Benjamin Franklin's day, families commonly had 8 to 10 children but by 1900 the average number of children per family was about three. In 1903, Theodore Roosevelt minted the phrase, "race suicide", to describe this curtailment of the American birth rate which he regarded as deplorable. Roosevelt pointed out that Germany dominated Europe because she had won "the warfare of the cradle." He was rigidly antibirth control. Herbert Spencer, the English philosopher, a few years earlier claimed that the New Woman by "the overtaxing of their brains" through too much mental effort had caused " a serious action on the physique" resulting "in a diminution of reproductive power."

In contrast to these pronatalists, there were important contemporary voices who spoke out in favor of family limitation. Among them was Abraham Jacobi, America's first great pediatrician, who in 1912, when 82 years old, courageously approved limitation of offspring in his memorable and historic presidential address before the AMA. He spoke unequivocably in favor of contraception for the poor, though in guarded language. "It has become an indispensable suggestion that only a certain number of babies should be born into the world. As long as...the well-to-do limit the number of their offspring, the advice to the poor... to limit the number of their children...is perhaps more than merely excusable. I often hear that an American family has had ten children, but only three or four survive. Before the former succumbed, they were a source of expense, poverty, and morbidity to the few survivors. For the interests of the latter, and the health of the community at large, they had better not have been born."

In the ensuing half century, a profound change took place in the fertility attitudes and practices of the American people. In 1960 and 1965, nearly nine out of ten married couples reported that they wanted families of four children or less. Most preferences clustered in the two-to-four child range and low income couples wanted the same number of children as higher income couples, while nonwhites wanted slightly fewer than whites. By 1965, 84% of all married women aged 18 to 39 reported that they had use some method of contraception and 90% either had used or expected to use contraception after having additional wanted children. These percentages measure the use of <u>all</u> methods of contraception --medical as well as nonmedical, more effective as well as less effective--as a result, they imply on superficial analysis that American couples achieve a greater degree of <u>success</u> in fertility control than is actually the case. Nevertheless, the gross statistics on contraceptive use document the conclusion reached by Westoff and Ryder that "clearly the <u>norm</u> of fertility control has become universal in contemporary America." It is our view that the U.S. medical profession has a

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Guttmacher is President of Planned Parenthood-World Population.

unique opportunity -- and indeed, responsibility -- to assist American couples to translate this norm into effective and successful practice.

In attempting to outline the growth and development of U.S. family planning programs, we plan first to analyze the organized services provided by Planned Parenthood Affiliates, hospitals and public health departments, in each case presenting pertinent historical material on the evolution of these modern services. Then we will attempt to assess the current situation in both private and public sectors, and to determine how much is being done and how much remains to be done.

There had been several lay advocates of contraception in America before Margaret Sanger. One of the most ardent was stout, pugilistic Emma Goldman, the anarchist who had been sent to jail several times for birth control activities. However, none of these earlier advocates attempted to organize a social movement which would result in the provision of clinical services.

Margaret Sanger was born a rebel like her father, a stance strengthened by associations with the socialist and anarchist groups which frequented Greenwich Village in 1912. When the Industrial Workers of the World struck textile mills in Massachusetts and New Jersey she marched with the strikers. In 1914 she blasted John D. Rockefeller, Jr., later her patron, as "a black-hearted plutocrat whose soft flabby hands carry no standard but that of greed." In a monthly magazine, The Rebel, for which she was the total editorial and business staffs, she wrote that "the marriage bed is the most degenerating influence in the social order."

To escape federal trial for having mailed a brochure on contraception, Family Limitation, Mrs. Sanger exiled herself in Europe in 1914-1915. This turned out most fortunately for the American birth control movement. Her English friend and personal tutor, the sexual philosopher, Havelock Ellis, insisted that she concentrate her fire on a single social issue, birth control, and leave to others denunciation of capitalism, marriage and the church. Ellis met her daily at the British Museum, outlined her reading, answered her questions and talked for long hours about every phase of pregnancy prevention. It was Ellis who in January 1915 urged her to visit the government-supported birth control clinic at the Hague conducted by Dr. Johannes Rutgers. There she saw and learned the use of the vaginal diaphragm and there she became convinced that contraception was primarily a medical matter.

She returned to the United States to open the first birth control clinic in the western world, and the first outside of Holland, in Brooklyn in October 1916. Difficulty has been encountered in procuring a doctor to serve in the clinic, but in the meantime, Mrs. Sanger and her sister, also a nurse, talked with prospective patients, took case histories and sold birth control pamphlets. As expected the clinic was soon raided and Mrs. Sanger and her sister arrested and convicted. Each served 30 days in jail. The arrests and convictions served a better purpose than is immediately apparent, because the case was appealed and finally heard by the Appellate Division of the New York Supreme Court. Judge Frederick Crane, in rendering his decision in 1918, sustained the conviction on the grounds that section 1145 of the New York Penal Code only permitted physicians, not nurses, to give contraceptive advice "for the cure and prevention of disease." Previous to Crane's decision the statute had been interpreted so that "disease" meant only venereal disease, but he broadened

the concept of "disease" to agree with its definition in Webster's Dictionary, "any change in the state of the body which caused or threatened paid and sickness." This signaled the green light for birth control clinics, but only if their patients had clear cut health reasons to prevent pregnancy. In 1923 Mrs. Sanger's American Birth Control League located at 104 Fifth Avenue opened the New York Clinical Research Bureau in two rooms adjacent to their office. For several years it flourished unmolested and when raided by the police in 1929, public opinion had so changed that the outraged judge found the two doctors and nurses not guilty in five minutes and rebuked the police.

Four influential senior faculty members of the Johns Hopkins Medical School opened Baltimore's first birth control clinic in 1927 which was affiliated with Mrs. Sanger's American Birth Control League. It was housed five blocks from the Hopkins Hospital, we assume by agreement, not to contaminate its corridors. Its Director, Dr. Bessie Moses, published the experience of its first five years, Contraception As a Therapeutic Measure. During this period 1,152 patients were referred for contraception by 140 physicians; no one was seen unless she had a letter from a doctor. Sixty-six percent were referred for somatic disease, 27 percent for multiparity, 5 percent because illness in the husband rendered him incapable of work, 2 percent for "not strictly medical" conditions, such as marital disharmony and recent parturition, and less than a half percent for an eugenic indication. Only married women were seen and their average age was 30 years.

Today's Planned Parenthood Federation is a lineal descendant of the American Birth Control League to which the earlier clinics belonged. It might be profitable to summarize current figures of our activities. The last year for which we have firm data is 1968. To show the growth trend we shall compare these data to similar figures for 1959, a full decade earlier.

In 1959 the Federation operated clinics in 90 different cities and in 1968 clinics in 132 cities. 114,349 different patients were seen in 1959 and 323,776 in 1968, a growth of nearly 290 percent. During most of the decade, between two-thirds and three-quarters of the patients had family incomes of less than $75 a week. $1,854,051.35 was spent for patient services in 1959 at the cost of about $16 per patient; in 1968, $10,844,963.60 or $33 per patient. Figures for ethnicity only go back to 1964 when 47% of the total patients were non-white. This dropped to 39% five years later in 1968. The figures on the ethnicity of the medically indigent served by Planned Parenthood are taken from a recent study by Vanky and Dean. It shows that in the three-year period 1966-1968, 49% of the medically indigent new patients attending Planned Parenthood centers were non-white, a figure only about 2 percent higher than the proportion of non-whites medically indigent and in need of birth control in these same communities.

In passing we should like to make some superficial observations on the effect of Senator Nelson's oral contraception hearings on our clinics. In January 1970 we saw 6 percent more new patients than in January 1969. In February 1970, the hearings having begun in mid-January, we saw 27% more new patients than in February 1969. In February 1969, 75% of the new patients selected the pill; in February 1970, the proportion of pill selectors among new patients declined to 62%.

This growth in new patients is apparently not unique to Planned Parenthood. Dr. Hans Lehfeldt tells me that new patients at the birth control clinic in Belevue Hospital increased 50% in February. From conversations with colleagues we are led to believe that patients who have been on the pill for a year or two without seeing a physician are suddenly seeking medical supervision. Then too perhaps, others who have been on the pill under the care of private physicians have suddenly come to our clinics seeking an alternative contraceptive method.

There was no great fervor among the American medical profession for birth control in 1912; Jacobi's stand was almost unique. The rank and file of physicians did not share his favorable opinion. The associations, academies and societies which alone could make an innovation such as birth control medically and generally acceptable refused to endorse it. A committee of the New York County Medical Society in 1916 feared that contraceptives "indiscriminately employed" would undermine personal morality and national strength. The committee reported that it suspected that professional abortionists and publicity-seekers were behind the pro-birth control propaganda. In 1917 Dr. George Kosmak, later to become the powerful Editor of the American Journal of Obstetrics and Gynecology, in a paper before the New York Obstetrical Society dismissed birth control advocates as "radical socialists" and "anarchists" whose unscientific literature on contraception contained "arrant nonsense, false reports, and...seditious libels on the medical profession." He encouraged his medical audience to recommend continence -- the only sure method -- in cases where pregnancy would endanger a woman's life.

Kennedy in his excellent new book, Birth Control in America, writes, "The attitude of most American physicians toward the early birth control movement reflected their middle-class upbringing and their commitment to nineteenth century sexual mores." Then too, "Doctors had a reflex aversion to anything that smacked of lay medicine, sensationalism and quackery." One must recall that the problem of quackery in medicine had been so intense and ubiquitous that in 1847 the American Medical Association was organized primarily to combat it.

Robert Latou Dickinson, a great protagonist of birth control and the most liberal and respected New York obstetrician-gynecologist from 1915 to 1935, was fearful of what he regarded as Margaret Sanger's sensationalism, though he applauded her aim to democratize knowledge and use of contraception. Dickinson found Mrs. Sanger's claims that birth control would end poverty, disease, crime, war and all types of social ills little removed from the pabulum of the patent medicine vendor. He therefore attempted to reduce her powerful personal influence on birth control to make it more acceptable to his medical colleagues. In 1923, Dickinson published a thoughtful review of contraception in Surgery, Gynecology and Obstetrics, the first scientific appraisal of the topic in American medical literature. In it he urged research to find a safe, effective, acceptable contraceptive. To neutralize Mrs. Sanger's lay influence, Dickinson with a few New York obstetrical colleagues formed the Committee on Maternal Health. The intent was to carry on "a series of impartial, well studied clinical tests" of various contraceptives. Dr. Dickinson's office in the New York Academy of Medicine acted as a referral agency referring patients to any of seven cooperating New York hospitals where they could receive contraceptive information. The program begun in 1924 met with little success. The only materials available for distribution by the hospitals were condoms and spermicidal

jellies. The project was poorly patronized and Dickinson concluded that "the bulk of applicants want a special clinic." Therefore, the brief lived hospital-based contraceptive clinic experiment in New York soon folded.

About 1930 the Johns Hopkins Hospital in Baltimore set up an unpublicized intramural contraceptive clinic in association with their one year postpartum return clinic. Diaphragms were the standard technique prescribed. I do not know whether there were earlier hospital birth control clinics in the United States, other than the very transient seven New York hospital clinics in 1924.

From my observation it was several decades later before many hospitals established well publicized birth control clinics. On coming to Mt. Sinai Hospital in 1952, I believe I instituted the first contraceptive clinic in New York City as part of 6 weeks postpartum return service. Until the Hospital Battle was fought and won in New York City in 1958, no municipal hospital in the City could even refer patients for birth control to any agency, much less serve them themselves. What a dramatic change intervening years have wrought. In 1969, in New York City, 14 municipal hospitals in 58 sessions per week gave contraception to 34,300 women, and 39 voluntary hospitals gave birth control to 22,200 women in 66 sessions per week. Thus in one community 53 hospitals operating 124 sessions per week served 56,500 women for contraception.

The changing attitudes of the medical profession are also reflected in the actions of the AMA on fertility control. In 1937, the House of Delegates adopted a statement on contraception which constituted a cautious approval for the integration of contraceptive prescription in medical practice. In 1964, the Board of Trustees appointed a Committee on Human Reproduction, chaired by Dr. Raymond Holden of Georgetown Medical School which brought in a report urging more positive AMA policies "on this very important medical-socio-economic problem." The House of Delegates adopted this report which characterized contraceptive prescription as "a matter of responsible medical practice" and called on the profession to accept "a major responsibility" for the provision of fertility control guidance to individual couples. The resolution declared that "the prescription of child-spacing measures should be made available to all patients who require them...whether they obtain their medical care through private physicians or tax or community-supported health services." It is of some significance that AMA President Dr. Dorman was among the 29 witnesses who testified last December in support of Senator Tydings' bill to substantially expand federally supported family planning services and population research.

Two pieces of legislation in the late thirties gave Mrs. Sanger and the Federation impetus to attempt to include birth control in publicly-funded health programs. Title Five of the 1938 Social Security Act provided $4 million in grants to state for maternal and child health services and the Venereal Disease Control Act in 1939 declared the prescription of contraceptives for the containment of venereal disease a proper legal purpose. These two programs were under the administration of the Children's Bureau and the U.S. Public Health Service respectively. The Federation pressured the two agencies to recognize the utility and legality of including contraception in their activities.

The U.S.P.H.S. had a long established policy of referring inquiries about birth control to the Federation or its affiliates, but the Children's

Bureau, under the administration of Katharine Lenroot, would permit no cooperation with the birth control movement. Miss Lenroot refused to grant that there was any relevancy between the well-documented increased incidence of maternal deaths in women of great multiparity and the use of birth control to prevent such multiparity. In 1938 she cancelled an invitation to Dr. Hannah Stone, then Director of the Clinical Research Bureau, to speak at a pediatric conference under Children's Bureau auspices on the grounds that her inclusion might offend other participants.

Eleanor Roosevelt had been an early financial supporter of the Clinical Research Bureau in New York and in 1940 lent her immense prestige to the birth control movement when she publicly declared herself favorable to family planning. Yet even Mrs. Roosevelt had little influence over Miss Lenroot, and was only slightly more successful with Dr. Thomas Parran, the Surgeon General. It is of interest that both Miss Lenroot and Dr. Parran were concerned over a declining U.S. population. Rather than the "purely negative approach of broadcasting contraceptive information," Parran said, the government should encourage more breeding among groups which he characterized as "biologically fit."

However, three of Parran's Assistant Surgeon Generals did not agree with their Chief and quietly began to approve use of Federal funds to provide contraception by state public health departments. Mrs. Roosevelt lent her support to Parran's progressive assistants. On March 5, 1941, representatives of the Federation, the Public Health Service, the Children's Bureau and the Department of Agriculture sat down with Mrs. Roosevelt at her invitation in The White House. The discussion was general, but it served to involve Mrs. Roosevelt directly in the Federation's Washington activities and she in turn involved the President who is reported to have been in agreement with the Federation's viewpoint. In a memorandum to Mrs. Mary Lasker, Mrs. Roosevelt wrote, "The President is going to speak to both Dr. Parran and Miss Lenroot to see if they can't get the whole thing moving." Mrs. Roosevelt wrote to Parran suggesting that he put Dr. Ziegler, one of the favorably inclined Assistant Surgeon Generals, in charge of a child spacing program.

There was a second birth control meeting at The White House the day after Pearl Harbor. Mrs. Roosevelt temporarily adjourned it while all listened on the radio to the President as he declared war. Miss Lenroot made it clear that "inclusion of birth control would jeopardize her other programs of maternal and child welfare."

Early in 1942, Parran stated that "planned parenthood programs...will receive my approval." New U.S.P.H.S. policy honored state requests for funding, but allowed no active propaganda for birth control. Miss Lenroot gave ground slowly, but in May 1942 Title Five funds were made available for birth control for the first time.

While the 1942 decision was considered a key precedent, it turned out in fact to have little practical significance. For the next two decades, the health departments of only seven states took advantage of the favorable policy and used some of their federal maternal health funds to support very small-scale family planning programs. Not until the 1960's, following the successful campaign to remove the ban on contraception in New York's municipal hospitals, the advent of the oral contraceptive, and the beginnings of concern about the population problem, was this early breakthrough significantly broadened to encompass governmental health agencies throughout the nation. Today fairly

extensive family planning programs have been developed by many health departments at state, county and city levels. At the federal level, several bureaus of the Department of Health, Education and Welfare, the Office of Economic Opportunity and the Department of Defense share responsibility for the administration of funds in support of these programs or for the provision of contraceptive services to persons eligible for direct care under the federal programs.

The federal programs today are shaped by the outcome of several significant Congressional actions in 1967. In that year, Congress voted to make family planning one of eight "special emphasis" programs in the anti-poverty effort. It also voted to earmark not less than six percent of all maternal and child health funds for support of family planning services and to require that family planning be offered to all appropriate recipients of public assistance. At the present time major bills to expand federal financial support and to reorganize the administration of these programs into a single more coherent agency are pending in the Congress.

It will be seen from even this brief sketch that America has become a nation of contraceptors. As with other aspects of medical care, Americans get their contraception from many sources. Many, probably most, have it prescribed by physicians in private practice. A significant number, particularly among lower income couples who cannot afford private medical care, attend hospital, health department or Planned Parenthood clinics. The exact proportion in each category is not known, although we may expect better information on the sources of contraceptive care as a result of the National Fertility Study to be conducted later this year. From past studies, we know that the pill had become the most popular method of contraception by 1965 but that two out of five couples continued to rely on non-medical methods of doubtful effectiveness. Typically, couples in higher socio-economic groups who can afford private medical care have tended to use the more reliable medical methods, while low-income parents, with less access to medical care, have depended more on the less reliable, non-medical methods (such as douche and foam).

We know very little about contraception in private medical practice. A study of physicians' attitudes in the 1950's revealed that most doctors were reluctant to prescribe contraception unless the patient specifically requested it, and would not take the intitiative to discuss fertility control, not even at the points in the family formation cycle when such a discussion would seem natural and obligatory, such as at the premarital and postpartum examinations. This study, of course, predated the pill and IUD and a few subsequent local studies have indicated some improvement in the attitudes of physicians, particularly younger ones, in the communities studied. But the extent of the improvement -- and the degree to which contraceptive consultation and prescription has become a standard aspect of practice among private physicians -- remains unknown. As will be seen below, however, we do know that even non-poor couples experience a significant incidence of unwanted fertility which could, at least theoretically, be prevented by a combination of better medical consultation and more effective contraceptive methods.

We know a great deal more about organized family planning programs which serve, for the most part, those classified as medically indigent, approximately 20% of U.S. women of childbearing age. According to a survey carried out last year for OEO by Planned Parenthood's Center for Family Planning Program

Development, there were in 1968 about 5.4 million low-income women who were at risk of pregnancy and not seeking one, and who comprised the approximate target population for subsidized family planning services. The study, which surveyed all identifiable services in all U.S. counties, showed that less than 800,000, or 14%, of these women were receiving services in 1968 from organized programs. About 40% of the services were provided by health department clinics, 27% by public and voluntary hospitals, 27% by Planned Parenthood Affiliates and the remaining 6% by clinics sponsored by other agencies. Of the 3,072 U.S. counties, 1,200 reported some organized family planning program -- but 1,000 of these saw fewer than 500 birth control patients a year. The 1,872 counties with no reported services at all contained one-third of the women potentially in need of service.

It is not known how many of the 5.4 million low-income women are prescribed birth control by private physicians in their offices through Medicaid or fee for service. According to a recent study, Family Planning, Medicaid and the Private Physician, by Rosoff, "a physician's participation in the provision of family planning services (i.e. to the medically indigent) is largely through organized programs which are more economical of his time and that the patient tends to gravitate to identifiable programs organized around her needs."

As with other health services, the federal programs to support the direct provision of family planning services has been primarily designed to subsidize services for the medically indigent. These programs, which are less than five years old, have grown at a rapid rate and have experienced substantial acceptance both from patients and the community at large. As of June 30, 1969, there were about 300 project grants for family planning services awarded by OEO and DHEW. In this fiscal year, the two agencies have available about $45 million to support specific family planning projects, as well as about $6 million for family planning services provided through maternal health programs.

In family planning therefore, again as with other health services, two distinct delivery systems have emerged and a comprehensive national family planning effort must therefore encompass two distinct objectives and related programs: 1. For all couples of child-bearing age, reduction or elimination of unwanted pregnancy and improved control of child-spacing, through a multi-faceted program to improve the efficiency of contraceptive practice. 2. For low-income couples, an additional "catch-up program" to provide them with the same degree of access to modern methods of contraception as the non-poor already have, by developing services which make family planning readily available and financially accessible.

The social importance of these objectives is underscored by the recent study by demographers Bumpass & Westoff, based on data from the 1965 National Fertility Study, the most recent nationwide investigation of the fertility attitudes and practices of American couples. The Study found that 22% of all births between 1960 and 1965 were not wanted at the time of conception by at least one spouse. As would be expected, only 5% of first births were unwanted, while more than half of sixth or higher order births were so designated. About 17% of births to non-poor parents were unwanted, compared to 26% among the near-poor and 42% among the poor. The authors concluded that the elimination of unwanted pregnancy would lead to a considerably reduced growth rate for the U.S. -- and perhaps even to an ultimate stable population size.

To enable every U.S. child to be born wanted by its parents is, of course, a difficult objective -- but there is every reason to believe that we can make very substantial progress toward its realization. To reduce the incidence of unwanted pregnancy among non-poor and poor couples -- and to enable couples without access to private medical care to achieve the same fertility rates as those who have access to such care -- are formidable assignments. Yet in the years 1960-1965, the poor and near-poor and a fertility rate of 152.5 births per 1,000 women 15-44, compared to 98.1 among the non-poor, despite the fact that both groups express the desire for essentially the same number of children.

As difficult as these goals are, we have a fairly clear idea of what must be done to achieve the . The shape of a comprehensive national program can be detailed. It would consist of steps like these:

(1) Improvement of contraceptive technology -- To encourage more acceptors and fewer dropouts requires simpler and safer methods. The coitally independent pill and IUD are an answer to the problem, but all must agree an imperfect answer. We need an immediate and massive increase of federal support for research to a level of $100-150 million a year.

(2) Stimulation of greater interest and involvement in family planning among physicians, public health professionals and paramedical personnel -- This must have its roots in comprehensive, basic curriculum changes in medical, public health and nursing schools and must include major post-graduate educational efforts. It must also include a creative approach to the appropriate use of para-professionals in family planning programs. For example, experiences here and overseas, particularly in Pakistan, have demonstrated that paramedical personnel can insert IUS's as safely as physicians.

(3) Removal of remaining policy and cultural barriers to the prescription of contraception. The other 49 states should copy the liberal legislation recently enacted in Illinois which establishes the legality of prescribing birth control to unmarried minors without parental consent.

(4) Reform of abortion laws so that the performance of abortion becomes an ordinary medical procedure between doctor and patient unencumbered by legal restrictions. After observing how imperfectly "liberalized abortion laws" have worked in California and Colorado and paying heed to the unsatisfactory Maryland experience of removing abortion from the criminal code and placing it under the Medical Practice Act, we have become persuaded that no law on abortion is the proper answer. This answer has been given in Hawaii and Maryland and will be given in all 50 states within the next 5 years. Despite its inevitability the medical profession collectively has made few preparations for this eventuality. Either abortion must be made an outpatient procedure within the hospital orbit or we must establish many separate and safe abortoria.

As part of an overall fertility control armamentarium, abortion should be a back-up procedure for failed or failure-to-use effective contraception. It must never be the primary method of birth control.

(5) Greater availability of sterilization -- The attitude of the medical profession in general to voluntary stabilization is medieval. Every possible roadblock to its attainment is interposed. Any adult couple of normal intelligence should be permitted to opt for sterilization irrespective of parity if they fully recognize the potential consequences.

(6) Creation of a network of hospital and neighborhood services offering free or heavily subsidized, effective and humane birth control care to low-income patients, coupled with outreach informational programs.

(7) Increased public funding to finance these subsidized services to a level of at least $250 million per year. It is of interest that every professional witness who testified at the Tydings Bill hearings in the Senate stated that its provisions for a rapid increase in project grant funds to $150 million a year would not be enough to get the job done.

(8) Assignment of higher priority in staff, budget and facilities to the provision of birth control in hospitals, public health department and antipoverty programs. The more glamorous and dramatic facets of medical service furnish severe competition to the prescription of birth control. Therefore, separate staff, adequately trained and paid, are necessary. Unless there is competence, interest and vigor in furnishing birth control, the task will be inadequately done.

(9) Expansion of education in human sexual behavior, including birth control and population dynamics. This must begin in primary schools and be reinforced through high school and college. One of the most urgent needs is the careful selection and training of teachers in this new discipline. The teaching of human sexuality must be included in the standard curricula of medical schools and given the academic importance it deserves.

This then is a brief review of how family planning developed in the U.S., where it currently is and where we believe it must go. Most of the measures we have outlined here are well within the realm of our current knowledge and our current knowledge and our society's available resources. We are certain that this audience will re-recognize particularly the key role envisioned for U.S. physicians, individually and as a profession, in moving systematically toward a society which is free from the medical and social scourge of unwanted pregnancy.

FAMILY PLANNING - WORLD PROGRAMS

Oscar Harkavy, Ph.D.

Your Chairman has asked me to speak about family planning programs with attention to successes, failures, target areas, potential impact, and future requirements.

To start, it may be useful to say what I mean by a family planning program. A national family planning program consists of a system to deliver birth control services to those who want them, usually coupled with an information and education program to tell people about these services and to encourage them to use them. The purpose of a family planning program is epitomized by the slogan: "Every child a wanted child."

There is hardly a nation in the world without some sort of organized family planning program. Even in the new micro-nations of sub-Sahara Africa, one can find a medical missionary and his wife providing family planning services for a few patients. Family planning programs range from modest beginnings such as these to national programs such as India's with a full-time army of 125,000 full-time field workers, some 375,000 part-time field workers, and 13,000 physicians trained in family planning and who participate to some extent, at least, in the nationwide effort.*

About 66 percent of a developing world's population live in countries that have an official anti-natalist policy, while 79 percent live in nations with governmentally supported family planning programs. The difference between 66 and 79 is accounted for by governments that support large-scale family planning programs but have not enunciated official population policy. For example, Taiwan ran the best nationwide family planning program in the world beginning in 1964, although an official policy was not adopted until 1968. A typical government policy statement points to the ill effects of high rates of population growth on the national and individual welfare and sets targets for reduction of this growth rate. For example, India's national policy is to reduce the crude birth rate from its present level of around 40 to 25 per 1,000 by 1976. Pakistan's national goal is to reduce its birth rate from 50 to 40 per thousand to reduce population growth from 3 to 2.5 percent by this year. I'm afraid it won't make it.

As would be expected, large-scale family planning programs--and national population policy--are the rule in Asia where the ill-effects of excessive population growth are visible to the naked eye. They are the exception rather than the rule in Africa and Latin America. Egypt and Tunisia have both official policies and national programs with considerable activity. Morocco has a

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*For data on family planning programs I have relied throughout on Dorothy Nortman, "Population and Family Planning Programs: A Factbook." Population Council, December, 1969.

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Dr. Harkavy is Program Officer in Charge, Population, The Ford Foundation.

program, but little activity, while in sub-Sahara Africa, Kenya first, and most recently, Shana, have adopted official policies and have launched programs.

Family planning in Latin America has grown surprisingly swiftly despite the dominant position of the Catholic Church, which by no means poses a monolithic opposition to the provision of contraceptive services. In Chile, the National Health Service provides family planning as part of its maternal and child health program. While the Brazilian government has taken a strong official position against family planning, a network of family planning clinics is being developed by a voluntary family planning organization called BEMFAM in which the most important professors of obstetrics and gynecology are the chief officers. In Colombia, leaders of academic medicine were the pioneers in family planning. Large numbers of health workers have received training in family planning under government auspices although the government has stopped short of officially supporting a national program. Widespread services are provided through the Colombian voluntary family planning association.

In Latin America, physicians have taken a leading role in promotion of family planning. A Latin American physician tends to state his position like this: "I'm not a demographer or an economist. I don't know whether population growth is good or bad for my country. I'm not a moralist, and I am not concerned with theological questions relating to contraception. All I know is that my maternity service is filled to over-capacity. Two or three women recuperate from labor in a single bed. The hospital is overflowing with septic abortion cases." Thus the medical profession takes leadership in family planning and rests its case on the health of the mother and the family.

Most national family planning programs are very new. India's program officially dates back to 1952, but in reality, it became effective only in 1965 with government approval of the IUD for nationwide use. Most of the other major programs are no more than 5 or 6 years old, and many have only been introduced in the last year or two. It is entirely premature to judge whether these programs are successes or failures. For the most part, they've just begun, and so far, they're reaching only a small fraction of eligible couples. As many as 40 percent of eligible couples are currently using family planning services in Hong Kong, 32 percent in Taiwan, and 25 percent in South Korea, but it is more like 7 or 8 percent in India, Thailand, and Tunisia. Unless at least 20 percent of eligible couples are reached, it is futile to try to measure the effect of family planning programs on the birth rate.

Looking back only five years, we see major advances in the adoption of official policy, in the organization of large-scale programs, in obtaining funds for such programs. Impressive records have been made of IUD's inserted and vasectomies performed and condoms distributed. In some countries, substantial numbers have accepted the "pill." But in terms of the job to be done, we have a long way to go. We cling dearly to our four success stories: Taiwan, South Korea, Hong Kong, and Singapore. Only in these places have we hard statistical evidence that fertility has fallen faster than it would have in the absence of a strong family planning program.

I doubt whether there is a miraculous key that will unlock the secret of bringing down a nation's birth rate. Progress will come through small improvements in the major elements of family planning programs. I'd like to talk

about these under four headings: 1. commitment of government and the strategic elites; 2. management of family planning programs; 3. information and education programs; 4. birth control technology.

COMMITMENT

Although 79 percent of the people in developing countries live in countries with national programs, in fact, commitment to birth control by top political leadership is extremely uncertain. It requires unusual statesmanship for politicians to become identified with birth control. Beneficial effects of fertility reduction can be realized only in the long run; politicians are necessarily concerned with their careers in the short run. There is little political mileage to be gained from impressive statistics on IUD insertions or cycles of pills distributed, while deleterious side effects of these methods may backfire on those who promote them and affect their chances of re-election. Thus, careful consideration must be given to ways to achieve deep and genuine commitment to birth control on the part of the top political leadership of the developing nations.

Commitment by the medical profession is crucial to the success of family planning programs, While physicians in Latin America are pioneers in family planning, medical leadership in countries like India and Pakistan, with outstanding exceptions, is not particularly vigorous in its support of those nations' programs. Day-to-day work in contraception--insertion of IUD's, performing vasectomies--is pretty dull business. The typical physician, understandably, would rather turn his talents to more interesting challenges to his skill. Some progress is being made in introducing population and family planning into medical school curricula; this should be an important means of heightening the young physician's understanding of and commitment to his nation's population problems.

National political commitment to family planning is weakened to the extent that it is regarded primarily as a health matter. Ideally, family planning should be an ordinary part of health services, particularly maternal and child health care. When we must rely on "doctor-methods," such as IUD's and vasectomies, the public health network is the natural carrier of family planning services. It follows that in most countries, family planning is the responsibility of the ministry of health which, unfortunately, is low in the governmental pecking order and generally suffers from meager budgets, insufficient and ill-paid personnel. While family planning is indeed a health matter, if a nation confines its total effort to curb its population growth to the public health sector of government, the effort will probably be less effective than if it involves other parts of the public and private sectors as well.

Occasionally, the family planning organization is given autonomous status within government. This is very useful because if the official in charge is close to the seats of power, he can not only call on the health network, but also on the radio and television ministry for mass media efforts, and on the ministry of education for population education in the schools. It is especially important that the family planning organization have direct access to the ministry of finance, which ultimately controls the allocation of funds, both from the nation's own budget and from external aid.

MANAGEMENT

This discussion leads into problems of managing family planning programs. The structure and operations of a nationwide family planning program closely resemble those of a large-scale, multiplant industry. India's program is truly big business. You will recall its 125,000 full-time and 375,000 part-time field workers. They run clinics in 17,000 urban and 31,000 rural centers. The family planning program must make or buy its product (contraceptives); establish a distribution system for its product (birth control clinics for methods that require medical care, such as IUD's, sterilization, or oral pills, and commercial channels for "non-doctor" methods such as condoms); recruit, train, deploy, motivate, and supervise a distribution staff (doctors, nurses, paramedical personnel, social workers, etc.); operate sales promotion campaigns (information and education programs on the availability and benefits of family planning); and adjust its operations on the basis of timely data on sales results (evaluation of service statistics). It is especially important--and extremely difficult in the absence of good data on births and deaths--that the management of a family planning program be able to evaluate its effect on the nation's fertility. Otherwise, it has no way of determining its cost-effectiveness. Above all, the successful operation of such an enterprise requires top management that can regard the enterprise as a total system and take measures to assure that all elements are operating effectively to maximize productivity.

Measured against a well-run business operation, few national family planning programs are operated at optimum efficiency. In too many cases, supplies of contraceptives are not available when and where they are needed; insufficient personnel are recruited; training is inadequate and not well related to the jobs to be performed; supervision is poor; programs "flyblind" in that appropriate operating statistics are not gathered in a form suitable for management decision making.

INFORMATION PROGRAMS

Information programs associated with family planning around the world suffer from several limitations: (1) they are generally not given very high priority and tend to be limited by lack of resources and personnel; (2) they tend to be designed, managed and conducted by people with little or no professional communications experience. As a result, they have been slow to make adequate use of the mass media, and the informational materials tend to be poorly designed, unimaginative, and unattractive.

BIRTH CONTROL TECHNOLOGY

Let us turn now to the products delivered by the family planning program--the birth control method itself. I think it is accurate to say that national family planning programs in the developing world were completely ineffective until the widespread use of the plastic IUD about four or five years ago. The record of IUD insertions in a number of countries is still very impressive, particularly in Korea and Taiwan. Even here, however, there has been a gradual decline in the number of acceptances per month. After the most highly motivated are served, it is more difficult to persuade the less well motivated to limit their fertility. Thus Korea achieved 50,000 IUD insertions in March 1967--March is the peak month for IUD insertions in Korea--about 33,000 in March '68

and only 27,000 in March '69. In India and Pakistan, there was initial enthusiastic acceptance of the IUD, but in their eagerness to meet targets, physicians may have exercised insufficient tender, loving care in their insertion and provided insufficient information on the possible side effects to their patients. Now IUD insertions have fallen sharply, and program administrators are generally disenchanted with this method.

Vasectomies, as is well known, are popular in India and in East Pakistan, particularly when a substantial bonus is provided for the patient, the man who brings in the patient, and the physician who performs the operation. They are less popular elsewhere, except for a certain vogue in California. There is a growing interest in tubal ligation done by a variety of quick methods under local anesthesia. The pills are used in Hong Kong and Singapore to a substantial extent. Studies of continuation rates with the pill for the developing world vary widely, but on the average, half of those who accept, desert the pill inside a 12-month period. Thus, possible hazards from long-term use of the pill are not particularly relevant to their use in the developing nations.

While improvement of each aspect of family planning programs--national commitment, program management, information and education--deserves concentrated attention, I believe that improved contraceptive technology is a sine qua non if family planning programs are to become dramatically more effective.

There are those who argue that emphasis on improved contraceptive technology is misguided; that the need is to improve motivation. However, poorly motivated people are more likely to use a simple and effective method, particularly one that requires only occasional administration, than they are likely to adopt and persist with a method that requires repeated doses and/or has side effects or is not entirely effective. Without neglecting other aspects of family planning program management, major priority must be given to the development of better birth control methodology if significant decreases in the birth rate are to be achieved.

I shall not anticipate Dr. Segal's discussion on contraceptive development but can not resist making a plea that development assistance agencies, both national and multilateral, consider support for reproductive biology and contraceptive development as a major claimant on funds allocated for population work. Reproductive biologists, both in the industrial and the developing countries themselves, should be encouraged with much more money than is now available to pursue fundamental and applied research leading to improved birth control technology.

At the same time, it would be entirely wrong to use the absence of ideal methods as an excuse for not doing the best job possible with methods now available. I doubt whether we will ever get a perfect contraceptive method. It is probable that the development, testing, use--and discarding for something better--of new contraceptives will be a continuing process. It is less likely that a single new birth control compound or device will be perfected that will be effective, easily and consistently used, and absolutely acceptable to all people everywhere.

In the absence of ideal contraceptive methods, there is growing enthusiasm in many countries for provision of abortion to back up contraceptive failures.

Abortion has brought down birth rates in Eastern Europe and Japan and, for that matter, throughout most of Western Europe and in those parts of Latin America that have low rates of population growth. The acceptability of this method is, of course, a decision for the citizens of each country. In Latin America, it must be remembered, contraception is accepted by many only as a means of preventing a worse evil, abortion. Until safe and effective chemical abortifacients are developed, widespread use of abortion as a birth control method depends on a good network of medical facilities, but these are typically lacking in rural areas.

Predictions as to the eventual effectiveness of family planning programs are almost entirely a matter of hunch. A well-informed observer like Bernard Berelson, President of the Population Council, believes zero growth in the world's population will not be reached anywhere in the developing world by the year 2000. (He points out that the closer such countries as Japan, East Germany, and Hungary get to a zero growth rate, the less happy they are with such consequences as labor shortages and an aging population.) Some of the more advanced of the developing countries, he believes, may manage to take one to one and a half points off their population growth rate in twenty years--or a reduction in birth rates by 12 to 18 points--if they have adequate networks of medical service, a reasonable level of literacy, and access to better contraceptives than are now available.

There is growing impatience with family planning programs as we know them. Even if family planning programs were so effective as to make every child a wanted child, it is argued that the world's couples would still want too many children to achieve population stability soon enough. Therefore, it is asserted, the state must intervene in individual fertility decisions if really substantial reductions in fertility are to be achieved. There are suggestions for social legislation, taxation, and other positive or negative incentive plans to discourage large families, many of which "would bring down the government faster than it would bring down the birth rate," as Frank Notestein has remarked. If a nation feels its welfare is so immediately imperiled by high fertility that it is prepared to legislate for lower birth rates, it must provide good birth control services if anti-natalist social policy is to be made effective. Despite their manifold shortcomings, national family planning programs have made a very good statr. And as Ronald Freedman has remarked, "The path from a three percent rate of population growth must go through two and one on its way to zero."

WORLD POPULATION

Frank W. Notestein, Ph.D.

The reason for talk about the population explosion is clear when one considers the trends. By Napoleon's time, after something like a million years of existence as an independent species, the human population reached about one billion. The second billion took about 120 years, and was reached by 1927. The third billion took 33 years, coming in 1960, and the fourth billion is expected after only 15 years by about 1975. By the end of the century the population is expected to number something between 5.5 and 7.5 billion perhaps about 6.7.[1]

Clearly the modern period is unique. The average annual rate of growth since the beginning of the Christian era has been very low, amounting only to 0.13 percent. Indeed, in a finite space, such as the world, the rate of growth over any historically substantial period of time is bound to average almost zero as everyone acquainted with logarithms realizes. At present the world's population is growing at about two percent per year. It would have been quite impossible to sustain that rate over any significant part of the race's experience. For example, with a two percent rate of increase since the beginning of the Christian era, just the water content of the human race would fill a sphere having a radius more than 10 times that of the earth. Clearly our epoch of growth is unique in mankind's history. We do not have to ask whether it will end. We need only ask when and how?

A world population increasing from the present 3.6 billion to something between 5.5 and 7.5 billion by the year 2000 is suggested on the assumption that there will be no major holocaust and that peacetime death rates continue to drop rapidly. The lowest figure of 5.5 billion is based on the further assumption that birth rates drop very rapidly; the middle figure of 6.7 also implies a reduction of birth rates. The maximum figure of 7.5 billion is reached on the assumption that birth rates do not decline. Underlying all the projections is the assumption that there will not be a major starvation and this assumption is in accordance with the weight of the evidence if there are no major disturbances of civil and international order.

To discuss the situation meaningfully we must separate the world into at least two categories: the technologically more developed regions and the technologically less developed regions. Following the practice of the United Nations, I include in the More Developed Regions: Europe, the U.S.S.R., Japan, Northern America, Temperate South America, Australia and New Zealand which altogether in 1970 had about 1.1 billion people or 30 percent of the world's total population. The remainder of the world comprises the Less Developed Regions, having in 1970 about 2.5 billion or about 70 percent of the world's total population.

The population of the More Developed Regions is growing at about one percent per year and, according to the medium U.N. projections, is expected to reach about 1.4 billion by the year 2000. In general, per capita income and literacy are high, birth rates and death rates are low, the economies are highly industrialized and, in 1960, something like 60 percent of the population was living in urban

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Notestein is President Emeritus of the Population Council.

communities. This is the part of the world whose troubles are always at the forefront of our attention because it is our own. Apart from the fact that we have the capacity to blow ourselves and everyone else up on a moment's notice, we have no troubles if one thinks in comparative or historical terms. We have never been more prosperous. So, with the usual human perversity we bemoan our fate and expect the worst. Except for obedience to law, all of the universally accepted criteria of wellbeing throughout this area are at an all time high - indeed, at levels contemplated only in science fiction a few decades ago.

In health, for example, we have never either lived so long or been so well cared for. The expectation of life at birth exceeds 70 years for females in at least 33 countries, including most of the Communist and several Oriental countries. It should be a source of great pride to the medical profession. It should, I would think, be a source of great embarassment to the American Medical Association, and indeed to any citizen, that our country is 12th or 13th from the top of the list of life expectancies, and that some 13 countries have lower rates of infant mortality. Moreover, in both our relative position has been falling. Our country, which clearly leads in medical science, trails badly on medical service. Still by past standards, and in comparison with most of the world, we are wonderfully healthy.

Since another program deals with the United States, I shall deal with the More Developed Regions only briefly and, since in haste, rather dogmatically. Because we hear so much about the population explosion, it is important to note that the More Developed Regions are growing rather slowly in spite of their low death rates. On the average their birth rate is about 19 per 1000 population and the death rates are about 9, yielding a rate of natural increase of about 10 per thousand or one percent. Of course this is much too high to be sustained over centuries, but compared with that of the world as a whole or our own recent experience it is a slow rate of growth.

Actually both in the United States and in other parts of the More Developed Regions the impression of rapid growth comes from the surge to the city. The tremendous growth of efficiency in agricultural production, coupled with the relatively inelastic demand for agricultural commodities, has sent waves of population to the city looking for jobs in the rapidly expanding secondary and tertiary sectors of the economy. In the ten years from 1950 to 1960, the urban population increased by 53 percent in the More Developed Regions. In the United States, half of our counties lost population between 1940 and 1950 and again between 1950 and 1960 drained by the trek to town. In the More Developed Regions, while the total populations were growing by one percent per year, the urban population was growing by 4.25 percent. The population explosion was strictly urban. Moreover this urban growth has created major problems of city building which, conspicuously in this country, have not been met.

We are told too that our pollution is the result of population growth. In fact it is a product of our prosperity on the one hand and our neglect on the other. If we had half of the present population we would have much the same kind of urban concentration, congestion, disorganized urban transport, and industrial waste disposal that creates pollution now. Indeed, Australia which is sparsely populated but concentrated in huge cities does have the same kind of problems. We shall solve the pollution problems faster if we concentrate on making the polluters pay than by worrying about the population explosion. Prosperity has its costs, and we have been trying to avoid them with tragic consequences.

We hear also that we are running out of resources. The fact is the opposite. Agricultural land has never been as abundant throughout the More Developed Regions as it is now. Excluding the Soviet Union, we have millions fewer acres under cultivation than we did at the turn of the century, simply because yields have been so dramatically increased. It is true that high grade ores are coming into short supply. Meanwhile, however, we are on the threshold of having limitless cheap energy that permits the economical use of low grade materials that are many orders of magnitude more abundant. Raw materials and energy have never been so cheap. We spend less than 3 percent of our incomes on energy and less than 3 percent on minerals. The sums could be doubled or tripled with small consequence to our living conditions, while yielding a tremendous enlargement of the supply of raw materials that can be economically exploited.

Although there has been atrocious waste, it is important to recognize that it is the high standard of living made possible by the heavy use of resources that has developed the technology which makes possible the expansion of resources. The fundamental fact is that the heavy use of resources in the More Developed Regions, by fostering modern techniques, has expanded the world's resources - not depleted them. Our sin has not been use, but failure to pay the costs of use by cleaning up pollution and recycling minerals instead of further degrading them.

The More Developed Regions face no acute problems of population growth because their birth rates have fallen to an all-time low. There is nothing mysterious about the decline. Study after study, in country after country, shows that it has essentially nothing to do with either falling capacity for reproduction or changes in sexual activity. The overwhelming factor has been the voluntary restriction of reproduction by contraception, sterilization and abortion.

We have a somewhat curious situation. Save in China, about which we know very little, birth rates have fallen very fast in the Communist countries until they are now much the same as they are here and in Western Europe. There is much opinion in this country that our birth rate is too high. But in the Communist countries the same rates are often thought to be too low. Partly for fear that birth rates would drop too rapidly, the Communist countries have been slow to make contraceptive service fully available. The result has been very heavy recourse to abortion, which has had to be legalized to avoid serious health problems. As a consequence abortion, which is rife but illegal in most other countries, perhaps prevent more births in the world today than any other method.

Of course the fact is that neither the majority of the noncommunist population of the More Developed Regions, nor the majority of the population of the United States is restricting its fertility as effectively as it would like to do. Bumpass and Westoff[2] have shown that in the first half of the 1960's, something between twenty and thirty percent of the pregnancies were not wanted. It is clear that a highly effective contraceptive service would considerably reduce our birth rate.

I happen also to favor the repeal of laws against abortion in the belief that parents should control the destiny of the nonviable products of their bodies. I do not favor it on demographic grounds, and hope that when abortion becomes legal no one will advocate is as anything but the personal tragedy which it inevitably is. One may expect, however, that easy abortion will further reduce the birth rate.

It seems to me that the ability of parents to determine the number of children they should have is a great extension of human freedom. Personally, I would favor it whatever the demographic consequences, because it will always be possible to alter the setting in which the choice is made in ways that stimulate or depress reproduction. But before we begin to be concerned about the situation, simple prudence would suggest that we make a serious effort to make voluntarism real for all our people. If we do so it is not clear whether fertility will be a little above or a little below the replacement level. When it does become clear the needed changes in the setting ought not to be too difficult. In fostering the spread of family planning there is room for real leadership from this Association, which thus far has brought up the rear of the procession.

But as the world goes these problems are trivial. We have virtually completed our transition in the recruitment of life from the grossly inefficient balance of high birth rates cancelled by high death rates to highly efficient replacement based on low birth and death rates. We are coming close to universal education and to high levels of material welfare. Having almost solved the huge problems of population growth, health, material welfare and education, we belie our heritage by refusing to attack the relatively simple problems of urban living in a rich society. It is time to stop moaning about the population explosion and to get to work cleaning up our nest and making voluntary parenthood real for all of us. The problems are not ideological or philosophical, they are particular, real and urgent.

The Less Developed Regions have staggering problems. They have 2.5 billion people, or 70 percent of the world's total, and the population is growing at about 2.4 percent per year. A perpetuation of that rate of increase would double the population in less than thirty years. Indeed, the medium projection for the year 2000 is about 5.2 billion, somewhat more than twice the present figure. In general, in the Less Developed Regions the economy rests heavily on subsistence agriculture and other extractive industries, per capita income and literacy are very low, birth rates are very high, and death rates range from the world's highest to the world's lowest, as does the density of population. Rates of growth vary from a little under 2 percent to well over 3 percent. Moreover, where the increase is relatively low, as in parts of Africa, it is clear that it will rise as soon as rudimentary health protection can be introduced.

The source of the increase is not hard to find. Birth rates, with a few exceptions, remain very high. They are those that maintained survival in the presence of the inevitably high death rates of a former time. Now, however, death rates have dropped spectacularly. Indeed, thanks to the young populations, yielded by very high birth rates, and amazingly good health protection the lowest death rates in the world occur in less developed regions such as Taiwan, Hong Kong and Jamaica. It is hard to realize the gains that have been made since the advent of sulfa drugs, antibiotics and modern insecticides. In a collection of some 44 life tables from the Less Developed Regions, some 24 had expectations of life at birth for females exceeding that of the United States for 1920. Of 30 such tables drawn from the Americas and Asia, 21 had life expectancies of more than 60 years. Thanks to modern medicine, we now conserve life under appalling economic conditions, and do so very cheaply.

Throughout most of the regions it is clear that the populations are already too large for the traditional economies to provide anything like decent living conditions. The only hope for vigorous health, education and freedom from

crushing poverty lies in modernization which permits the sophisticated use of resources and inanimate energy. Such modernization in turn requires a health and educate population and heavy investments in transportation and capital equipment. The difficulty is that at the same time these regions are having to meet the costs of inordinately high rates of population growth. Moreover, the costs of growth have to be paid before income can be diverted to strengthening the economy. Indeed populations growing at 2.5 percent per year have to invest something like 8 to 10 percent of their national income just to keep living conditions from deteriorating. All improvements have to come from savings above that level. Such savings are not difficult to obtain in rich societies, but they do not come easily from populations so poor that 80 percent of family income goes for food alone and the people are malnourished.

Very high birth rates are obstacles to development mainly because they bring such rapid growth, but also because they yield very young populations. Birth rates over 40 per thousand such as those throughout most of the Less Developed Regions, generate populations in which more than 40 percent of the total is under 15 years of age. It is because of the heavy load of youth dependency that each year sees an increase in the number of illiterates in spite of notable efforts to extend mass education. It is also the mass of young people who, finding small economic opportunity in the countryside, are creating vast pools of political alientation in urban slums.

The risks in the coming decades are not those of starvation in nations that have functioning governments and economies. We cannot expect them to retain public order while eking out an ever more meager living for an every increasing number. The aspirations are too high and the frustrations of failure will be too great. Long before numbers exceed those that can be fed by a functioning society, there will be upheavals such as those we have seen in China, Nigeria, and Indonesia. Then the risks become very great for the margins of protection from both famine and disease are thin. It is not at all beyond the bounds of possibility that widespread political upheavals in Asia, blocking the transportation of food and medical supplies, will result in the deaths of tens or scores of millions in a rather short time.

The realistic choice for the Less Developed Regions seems to me to lie between catastrophy on the one hand and substantial improvement in living conditions on the other. Probably in the next decades we shall have examples of each situation somewhere in the Less Developed Regions. But if the world will pay attention, we do not have to see tragic developments. If the More Developed Regions value their own welfare they will pay more attention than they have thus far. The world is much too interdependent so far as both raw materials and the spread of disease are concerned to tolerate safely disorganization and the massive loss of life anywhere.

Fortunately the opportunities for economic development are very great. Almost everywhere economic growth has been more rapid than population increase, so that, in general, living conditions have improved somewhat throughout most of the Less Developed Regions. One hears so much alarmist talk about food that it is easy to gain the impression that diets have been deteriorating. The opposite is generally the case. It is true that in Asia the failure of two monsoons in a row brought tragic crop failures, and that starvation was avoided by massive shipments of grain from the United States. We furnished something like 8 percent of the cereals for India and Pakistan.

It is also true that there has been an almost miraculous spurt in production since the drought. The sharp lessons of the drought, and the demonstrated miracles of the Green Revolution have injected new energy into the agricultural sectors. New high yielding strains of short stalked wheat and rice make the use of fertilizer highly profitable. Moreover, their more rapid maturing permits double and triple cropping. The new wheat has spread like wildfire through India, Pakistan, Iran and Turkey and has, indeed, glutted the grain markets in West Parkistan and parts of India. It is probable that further gains will come a little more slowly, but knowledgeable authorities say that there is no inherent reason why the Less Developed Regions should not treble their food supply between now and the year 2000.[3] The gains will not come automatically, or without trouble, but they can be made if there is an orderly and energetic development alorg lines that are already clear.

Although invaluable in coping with problems of population growth, the new techniques of agriculatural production create another major demographic problem. They can be used only on well-watered land. It seems likely that the area under cultivation, even in India, will contract rather than expand. It will probably become uneconomic to use the dry uplands for cereal production. If so, this means that tens and perhaps scores of millions now engaged in dry-land agriculture will have to find other means of support. In view of this almost inevitable dislocation, it is to be hoped that the new methods can be introduced with a maximum of labor and a minimum of machinery to help keep a redundant labor force occupied. The risk of political upheaval from displacements brought about by productive innovations is very great. Already there have been riots in South India by laborers dissatisfied with their share of the new productive gains.

These difficulties, however, are the costs of a great triumph. We now can see how it will be possible to treble the food supply in the next 30 years, and only a short time ago this possibility was far from clear. If all goes well there is a chance of improving nutrition for a doubled population. The Green Revolution promises to permit escape of the most crowded of the Less Developed Regions from what seemed to be a desperate emerging shortage. The warning should be clear. The Less Developed Regions have something like a generation to set their demographic houses in order. In the long run low death rates can be retained only with low birth rates.

What then are the prospects for reducing birth rates? I think they are much better than is generally realized. True, very few of the birth rates have begun to decline, and the values of the traditional society still put high premiums on childbearing. But there is also much that is new. Consider the following:

(1). Innovation is in the air. Increasingly there are schools, transistor radios, motor busses, cities that, with all their squalor, open the eyes to the possibilities of a new world. Now the Green Revolution begins to produce new miracles - miracles that could not be performed by the ancestral farmers. It becomes increasingly clear that education pays. Moreover, the children no longer die like flies. The pressures for restricted childbearing are mounting in both the city and the countryside.

(2). Governments are progressively more alert to the importance of slowing population growth, as each year large parts of the economic gains are absorbed by new population growth. There has been a profound transformation in views.[4] Two decades ago no government could be interested in efforts to cut the birth

rate. Today almost all of the countries of Asia and a goodly number of those in Africa and Latin America have national policies designed to reduce growth by spreading the practice of family planning. To those who say that family planning is the policy being forced on the Less Developed Regions by the More Developed Regions, the answer is crystal clear. It was the independent governments of the Less Developed Regions, and neither the colonial governments or the governments of the More Developed Regions, that first adopted formal governmental policies to encourage the practice of birth control among their own people.

(3). Some programs are being successful. Of course, it is a far cry from a paper policy to a program that actually fosters family planning, and, indeed, fair words have come faster than effective action. Nevertheless, a number of countries including South Korea, Nationalist China (Taiwan), Hong Kong and Singapore have all mounted highly effective family planning programs. In South Korea and Taiwan it is clear that some 40 percent of the women of childbearing ago are practicing modern contraception. Moreover, in the past six years the birth rates have dropped spectacularly. They are now in the low 30's or high 20's in all four areas.

(4). The large countries have had more difficulty in getting organized. India has had a rather weak program. In some parts of the country it has reduced the birth rate, in others it has had little effect. Pakistan may have reduced its birth rate by a couple of points. The problems are difficult and the large-scale programs are relatively new. Nevertheless, throughout much of Asia, substantial numbers are now using modern contraception, sterilization, and (often illegally) abortion to limit their childbearing.

(5). A few years ago neither the governments of the More Developed World nor the International Agencies were willing to help the poorer countries with family planning. All of the active help was by private agencies. Now a number of governments are willing to help, and the United Nations Organizations are beginning to add assistance in family planning to the program of study that the U.N. has long sponsored.

(6). Survey after survey in country after country has shown that almost everywhere the heavy majority of the people report that they want to limit the number of their children. The chiche about the lack of interest on the part of the peasant still survives perhaps because those wanting to restrict chilbearing often want rather large families. But they do not want unlimited numbers and that is the beginning of the change. Indeed it is my impression that the main difficulty in introducing effective family planning in the Less Developed Regions does not lie with the people as much as with the bureaucracy, who still think of the peasants in traditional terms, and who have minimal ability to organize and mount an effective delivery of services. This too is changing.

(7). Matters would be greatly helped if still more acceptable and effective methods of contraception than those now available can be found. Today, the condom, the intrauterine device, and sterilization are the most used methods in the Less Developed Regions. Better methods are urgently needed, because the weakly motivated require cheap, convenient and effective means. Alas, almost trivial funds are devoted to the subject - trivial that is in relative, rather than in absolute terms. Thus far private sources have devoted more funds to this research than all of the world's governments and international agencies put together. Fortunately there are some hopeful signs for future developments.

One cannot foresee what will happen but the foregoing factors make it reasonable to think that we are at the beginning of an accelerating trend toward the limitation of fertility.

I would not be surprised to see Asia and Latin America make substantial progress by the end of the Century. It seems not outside the bounds of possibility that by the year 2000 fertility might be reduced to levels little above that required to replace the population. Growth will continue beyond that time until the age composition of the population comes into equilibrium. But it is possible that the growth of population in the Less Developed Regions outside Africa might come down to something between .5 and 1 percent per year.

Whether it does will depend on the energy with which the governments, the international agencies and private agencies tackle the problems. The world now has the prerequisites for finding a solution to the problems of growth. If we apply our knowledge in family planning, and in the whole field of balanced development, there is for the first time in history a chance to find solutions to the problems of poverty and disease. If we again let the opportunity slip, the future looks grim indeed.

Notes

1. The Population figures used in this paper come from:

   "World Population Prospects as Assessed in 1963." United Nations Population Studies No. 41, New York, 1966.

   "World Population Situation" Note by the Secretary-General, United Nations, Population Commission E/CN, 9/231, 3 September 1969.

   The revised U.N. projections go only to 1985. Those used here for 2000 are obtained by extrapolating the rate of growth between 1965 and 1985. For much the same figures see also my article in: Hardin, Clifford M. (ed), "Overcoming World Hunger", The American Assembly, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1969, pp. 16 and 17.

2. Bumpass, Larry and Westoff, Charles F., "The Perfect Contraceptive Population: Extent and Implications of Unwanted Fertility in the U.S." Unpublished manuscript.

3. Hardin, 1969 supra cit.

4. Nortman, Dorothy. "Population and Family Planning Program: A Factbook." Reports on Population/Family Planning. The Population Council and the International Institute for the Study of Human Reproduction, Columbia University, December 1969.

CLINICAL ASPECTS OF CONTRACEPTION AND FERTILITY CONTROL

SCHUYLER G. KOHL, M.D.

You no doubt have noted, in yesterday's discussions, and you will further note in those to come later, that the physician plays an integral part in the success of a program in population control. Invariably he becomes the connection between the reproductive unit and the investigation, research and planning. He serves the very important function of continuing evaluation of the effectiveness of the program and its safety. Therefore the practicing physician has three responsibilities: 1) to apply the methods of fertility control to the individual unit. 2) to evaluate their effectiveness in achieving the desired goal. 3) a continuing surveillance and evaluation of the safety of a particular method. As a matter of fact, he is constantly evaluating the relationship between safety and effectiveness.

Not infrequently the risk-benefit ratio is the determining factor as to whether or not a particular method will be applied and subsequently whether it will continue to be used. This position of evaluating risk to benefit is not peculiar to a physician when he deals with contraception. This is a matter which is of concern to him and one with which he has considerable experience in all of his dealings with patients. We know that there is hardly any effective drug which does not have a risk for some or all patients.

METHODS OF CONTRACEPTION

At the present time there are generally available, only two methods of contraception which are either one hundred percent effective or approach this figure. One of these, abstinence, is not popular nor is it likely to be employed by a large segment of the population.

The other method of contraception which approaches one hundred percent effectiveness is the oral contraceptive. The Pill is known to all of you. You have heard much of it in the lay press, in the records of hearings of committees of the Senate of the United States and in medical publications. Perhaps my membership on the Advisory Committee on Obstetrics and Gynecology of the Food and Drug Administration produces some bias, but nevertheless I believe that the First and Second Reports on Oral Contraceptives, produced by that committee, are informative and accurate. At the outset, I wish to make it clear that I am wholeheartedly in agreement with the conclusion of the second report which states "when these potential hazards and the value of the drugs are balanced, the committee finds the ratio of benefit to risk sufficiently high to justify the designation safe within the intent of the legislation." I make this statement being cognizant of various reports in the lay literature, the medical literature, and the proceedings of Senator Nelson's committee. For the benefit of the layman I think that one of the best resumes on oral contraceptives is that which occurs on page 314 and following of Consumer Reports, May, 1970.

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There is no question but that a patient considering the use of an oral contraceptive should be familiar with all the risks and possible side effects which she may encounter when employing this medication. It is the responsibility of the prescribing physician to see to it that she has this information and that it has been given to her in a manner which permits her to understand it and evaluate it. However, it does not relieve the physician of his responsibility of determining whether this is an appropriate or an inappropriate method of contraception for her. We must not lose sight of the fact that we are dealing with a potent combination of drugs. A combination which is sufficiently potent and effective to interfere with the normal hormonal relationships existing between the pituitary gland and the ovary. It is thus that we are preventing ovulation and it is for this reason that there is the effectiveness noted previously.

It is well recognized and accepted that one using the oral contraceptives is subjecting herself to an increased risk of thromboembolic disease. The reports of the British Government's Committee on the Safety of Drugs as well as that of Dr. Sartwell and the previously mentioned FDA committee, establish this fact, beyond question, in my opinion. However, the degree of risk must not be lost sight of in as much as we must evaluate the risk-benefit ratio for each particular patient. To recapitulate, the risk of death among women using oral contraceptives is in the neighborhood of three per hundred thousand per year. This risk is twice as great for women over age thirty-five as it is for those in the twenty to thirty-four age group. Of course there is a higher frequency of non-fatal thromboembolic disease and this has been estimated by the British to require hospitalization in perhaps one in every two thousand users. It has further been observed that women with type O blood experience fewer clotting problems than do those of other blood types. In evaluating the risk of disease or loss of life, one must remember, of course, that a pregnancy itself carries certain risks. Depending upon the population concerned, in the United States, the risk of death during pregnancy varies from perhaps twenty to fifty women per hundred thousand. Immediately it must be pointed out that a woman does not have to substitute the risk of death while taking the pill for risk of death in pregnancy. There are other effective methods of contraception available. Though they may not be as effective, when one reaches effectiveness of ninety-five percent or better, one is indeed dealing with alternate effective methods of contraception.

The risk of cancer for women using oral contraceptives is indeed a moot question at this time. Intellectually we are concerned that it might be carcinogenic in the human female. Certainly it has been demonstrated, in most lower animals, that estrogenic substances are carcinogenic. Previously identified carcinogens in man have not been apparent in less than ten years of exposure. At the present time we are just beginning to reach the point in time when large numbers of patients will have been exposed to this regimen for that period of time. The reports which are available at this time, in my opinion, are not definitive and indicate that the suggestions put forth in the First and Second Reports on Oral Contraceptives, were quite correct in recommending that there be constant surveillance of oral contraceptives and that special attention be paid to carcinogenesis.

The matter of carcinogencity is of huge importance and every practicing physician, who is involved with any patient using oral contraceptives, must

participate in this surveillance and report it. It is absolutely unconscionable for a physician to prescribe these drugs for unlimited periods of time, nor is it conscionable for him to renew such prescriptions without adequate surveillance of his patient. Not only must the patient be fully evaluated, from a medical standpoint, prior to being placed on the medication, but she must be maintained under surveillance at intervals of no longer than six to twelve months. It is most desirable that she be examined every six months. The minimum to be included in this consultation is a history and detailed questioning about the possible symptomatology and signs which may be related to the medication, recording of weight and blood pressure, examination of the breasts and axillary glands, a complete vaginal examination including Papanicolaou smear and rectal examination. Special attention should be given to the patient's legs in searching for venous problems and difficulties. In our family planning clinic, we have a detailed checklist which must be followed and completed at each visit.

The metabolic effects of the oral contraceptives are really not very easy to evaluate at this time. Many of the changes which occur are similar to those which are seen during pregnancy. It is well accepted that these changes revert to normal upon completion of pregnancy or discontinuance of the use of the oral contraceptives. Therefore, they may be of no great moment. However, this supposition is certainly not yet proven. Again, as with the problem of carcinogenesis, the long-range effect in precipitating diabetes in the patient so inclined, or the long-range effect of some increase in blood lipids, or the long-range effect on the pituitary, the thyroid and the adrenals must await the collection of more data and more experience.

Whether the variations in sexual desires reported by women on the pills is a metabolic or a psychic effect is most difficult for me to evaluate. If one asks this question of patients, and we do, one discovers that one third of the patients experience no change whatsoever in their sexual drives, another third notice a considerable increase in their sexual desires and one third report a marked lessening of sexual drive. Not infrequently I have found it desirable to change a patient from the oral contraceptives because of the decrease in her sexual drives. Most often, a change to another method of contraception will correct this, but not always. Unfortunately such information is not available for patients before they start on a treatment regimen.

The possible genetic effects of oral contraceptives upon subsequent progeny is, of course, a matter of great importance. One can really gain no sound assurance from the fact that there have been many pregnancies in women who have temporarily used the oral contraceptives and subsequently decided to become pregnant and that their offspring have demonstrated no greater evidence of malformation or faulty development than is seen in the general population. If it be that those genetic abberations which are produced are of such severe nature that abortion results, one's concern would be considerably satisfied. However, this is not known and I am pleased to learn that the Food and Drug Administration is pressing research in this particular area.

Many women are concerned about infertility after using the oral contraceptives. I can report that among physicians closely involved, there is relatively little concern in this area. Most believe that a woman is probably no more or less fertile at any particular point in time than she would have been whether she used the oral contraceptives or not. It must not be forgotten that a conservative estimate of the non-fertile unions in the United States is approximately five

percent. It is to be anticipated that most women who have been on oral contraception, upon cessation of use of this medication, will resume ovulation and menstruation in a matter of one to three months.

These disadvantages are to be weighed against the obvious advantage of having a contraceptive method which is practically one hundred percent effective, which is easy to maintain and is not associated with the sexual act.

MECHANICAL METHODS

The mechanical methods of contraception are perhaps the best known alternatives to the oral contraceptives. The condom and the vaginal diaphragm are well known and have had a long and successful use by couples desiring to practice contraception. These methods when properly used achieve effectiveness in the neighborhood of ninety percent to ninety-five percent. The problems involved with them are that they are definitely connected with the sexual act and require preparation. The lack of spontaneity, the need for diligence and consciousness are important factors. Neither of these effective methods is effective in the bureau drawer. They are effective on the penis or in the vagina only. Therefore it is important, when prescribing these methods, to discuss with the patient how the effectiveness may be increased by anticipation of sexual activity. In this particular area these methods are not anywhere near as ideal as the oral contraceptive. The vaginal diaphragm and jelly used regularly after the female has been instructed that this innocuous device should be placed in the vagina even when she doesn't anticipate sexual intercourse but when she will be in the vicinity of her cohabitor, makes for a success ratio that it is very good. In most patients who accept this method and practice it assiduously, a success ratio of ninety-five percent or better has been achieved. Of course it is essential that the device be properly fitted for each patient and that she be instructed how to use it and that she demonstrate her ability to use it properly. I am constantly distressed when I learn that so many of the devices distributed are in size seventy-five millimeters. It is my experience and that of our clinic that we rarely use diaphragms of this small size. By being certain that the patient is fitted with the largest possible diaphragm that fits into the posterior fornix and behind the symphsis pubis, the possibility of the diaphragm being inserted anterior to the cervix and aiding conception is markedly diminished.

For several years, in the past, cervical caps of various kinds achieved some degree of popularity. Especially those that were to be placed on the cervix and to remain there except during the menstrual period. These are not infrequently displaced and of course contraception is lost when this happens. One must remember that there is a considerable tendency for women not to manipulate within the vagina and such dislocations can occur without being noted.

INTRAUTERINE DEVICE

The intrauterine device as a contraceptive agent, has returned to favor during the relatively recent past. During my medical educational experience, it was made quite clear that devices inserted into the cervical canal or uterus were fraught with great danger to the patient. This was true and no doubt was related to the composition of the device. However, it should be

remembered that such techniques are of long standing and perhaps date back to the camels and their drivers in crossing the Sahara Desert. It is reported that they routinely placed smooth round stones in the uteri of the female camels to prevent their becoming pregnant during these long trips. (It is stated that the camel is an "onery" enough animal in the non-pregnant state). However, with the introduction of newer materials and especially with the newer plastics, great strides have been made. The plastics which have a memory and can be inserted through a straight inserter and then resume a shape which tends to partially fill the uterine cavity has been a boon to this method of contraception. The number of different shaped uterine devices is legion. Those of you who are familiar with the field of Obstetrics know that in the past many people have been remembered because they invented a particular type of obstetrical forceps. It seems that nowadays we are being flooded by large numbers of intrauterine devices which vary somewhat in their shape and configuration and carry the names of many different people. Recently the newer metals or rather new treatment of older metals, has made it possible to insert certain metalic devices within the uterine cavity and allow them to remain there for indefinite periods of time. The intrauterine device satisfies the ideal contraceptive to a large degree. In the majority of patients it has no effect upon them systemically; it does not interfere with normal hormonal activity; the patient menstruates regularly; it is ninety-five percent or better effective in preventing pregnancy. It is effective in preventing intrauterine pregnancy. It appears that the frequency of tubal gestation is approximately the same in those patients using intrauterine devices as it is in those patients who become pregnant without an intrauterine device. The disadvantages of the intrauterine device are that it is expelled by a certain number of patients and if it happens without the patient's knowledge, she is left without contraceptive protection when she believes that she does have such protection. Also, perhaps twenty percent or so of the patients find that there is increased bleeding and pain associated with the presence of the intrauterine device. This method has the great advantage of not being associated with the sexual act and is always present. The fact that most devices have threads attached to them which protrude into the vagina, makes it possible for the patient to check and to be certain that the device is in place. With the exception of the rejection of the device, the pain, the bleeding, there are practically no side effects in the use of this modality of contraception. When the device is inserted by a properly trained individual, the danger of perforation is negligible. This is especially true if the individual inserting the device follows the suggestions put forth by the FDA Advisory Committee in its publication on the intrauterine device. To summarize, a complete pelvic examination should be carried out, a Papanicolaou smear should be done, the position of the uterus should be determined, a tenaculum should be placed on the anterior lip of the cervix and pressure exerted downward in the axis of the vagina so that the angle between the cervical canal and the uterine cavity is reduced and the uterus sounded before the intrauterine device is inserted. In our experience there has been one perforation of the uterus and this was a perforation of the cervical canal. Again, I would like to strongly recommend the publication on this subject, put out by the Food and Drug Administration. The Committee has recommended that close devices be avoided because of the danger of intestinal obstruction if perforation does occur. The Committee was able to assemble fifteen reports on intestinal obstruction related to intrauterine devices and in the thirteen where the device was identifiable, it was a closed device.

Each of us has his favorite instrument, that instrument which he is able to use effectively and efficiently. Likewise with various types of

intrauterine devices, we develop an ability to manage certain of them very well and we develop a confidence in them which is transmitted to our trainees and our patients. In our clinic we have found two devices particularly effective and easy to manage. One of these produces a bit more symptomatology (bleeding and pain), but has a much lower incidence of rejection. Recent refinements in the device appear to have decreased these disadvantages to the same magnitude as the other. If this continues we will probably shift more and more to using this device. I find a certain advantage to using one technique and mastering it. In my opinion the intrauterine device is a very good method of contraception for those who have been pregnant previously. It is not as effective in the nulligravida nor is it as easily inserted. Further, its rejection rate by the woman who has never been pregnant is considerable. This detracts markedly from its effectiveness as a contraceptive agent. However, there is an increasing experience in using an intrauterine device in the nulligravida and perhaps in the future I may be willing to change my opinion. The intrauterine device is inserted easily, without anesthesia and without dilitation of the cervix in the individual who has previously had a delivery or an abortion. This is frequently not so in the nulligravida. It is not unusual for some dilitation of the cervix to be required and there may be considerable pain and discomfort on the part of the patient. Also, frequently, the vagina is not sufficiently dialated to permit adequate exposure and manipulation.

The matter of the introduction of infection into the generative tract, by the insertion or the presence of the intrauterine device, is a matter of importance. Pelvic inflammatory disease is a common malady among patients in the lower socio-economic group of New York City and we have a large experience with this condition. We find that there is no increase of frequency of pelvic inflamatory disease in our patients with intrauterine devices when compared to the population we serve who do not have intrauterine devices. We treat these patients in the same way that we treat the ones without intrauterine devices. Depending upon the severity of the symptomatology and the physical findings, the patients will be treated with anti-microbial agents on an out-patient or inpatient basis. The intrauterine device is kept in place. If the patient does not respond to therapy, the intrauterine device is removed and the therapy repeated. It is rare that improvement is noted after removal of the intrauterine device.

This is an ideal method of contraception which is applicable to a patient of any socio-economic status. It is not like the vaginal diaphragm which has a high degree of success in patients of high socio-economic status and a poor efficiency in patients of low socio-economic. In this way it approaches the theoretically universality of the oral contraceptive without its side effects.

SPERMICIDAL AGENTS

Jellies, creams, suppositories and the like can be inserted into the vagina prior to sexual intercourse and certainly have an appreciable degree of effectiveness in preventing conception. Most of these contain spermicidal agents, such as phenyl mercuric acetate. This method of contraception has the disadvantage of being associated with the sexual act, requiring preparation and a limitation of spontaneity. Also, when suppositories are used, sufficient time must elapse between insertion of the suppository and sexual intercourse, for the wax capsule to melt and free the spermicidal agent into the vagina. These substances are soluable in the vaginal secretions and are rather rapidly spread throughout the vagina and are therefore reasonably effective-about fifty percent.

FOAMS

Foam has been used in the vagina for quite some time as a mechanical block to prevent spermatozoa from entering the cervical canal. This has been dispensed in pads which foam upon contact with the vaginal secretions and is presently available in an aerosol dispenser. These methods are of considerable effectiveness, similar to that of the spermicidal agents. The large disadvantage is concerned with the esthetic difficulty involved in such substances being present in large quantities during the sexual act.

STERILIZATION.

Sterilization, male or female, is approximately one hundred percent effective in preventing pregnancy. Except for the operative risks involved, there are no side effects and it provides protection for as long as the patient desires. It must be remembered that in better than fifty percent of the patients, reproductive activity can be restored following sterilization, if the patient so desires. In neither the male nor the female does sterilization have any adverse effect upon sexual performance or enjoyment. That is it has no physical effect and with proper instruction and preparation of the patient it should have no psychological effect. The ideal way to administer this method of contraception to the female is following her last pregnancy. It is advised that this procedure be carried out within twenty-four hours of her last delivery. This will either not prolong her post partum hospital stay at all, or if it does it will be a matter only one or two days. It is much more convenient to the patient and will effect greater economic saving than will be the case if a subsequent hospital admission is required. Also, the performance of the operation is much easier and simpler when done in the immediate post partum period.

Male sterilization can be carried out on an outpatient basis and the patient need suffer no discomfort, nor loss of time other than the time spent in the physician's office. It is done under local anesthesia and does not require hospitalization. One of my colleagues has recently discovered a way to increase sterilizations among his male patients. He asks the husband and wife to meet him in his office and he describes to them what is involved in male sterilization and female sterilization. He makes it abundantly clear that the male sterilization is by far the simpler, cheaper and more easily accomplished of the two. He then retires and leaves it to the couple to decide who will be sterilized.

When female sterilization is carried out in the classical fashion, using absorbable suture material and allowing the severed ends of the tubes to separate, it is indeed a very effective method with very very few failures. If however a technique is employed which crushes the tube and/or employs nonabsorbable suture material, so that the severed ends of the tubes remain in approximation to one another, recanalization and failure is more frequent.

ABORTION

It should be apparent to all of us, at this time in the United States, that abortion is going to be a method of contraception at least for awhile. I'm certain that you and I are in agreement that prevention of pregnancy is much more desirable and is to be preferred to evacuation of an unwanted pregnancy

from a pregnant uterus. However, until American women and men are convinced that it is much more desirable to prevent pregnancy than to abort it, we will be faced with a large number of abortions whose only indication is contraception. The rapidity with which the abortion laws are being changed in the several states, makes this quite clear. Further, the mobility of our population, makes it evident that there are now sufficient states which permit abortion on demand, that it is universally available. In the past, this method of contraception has been available, with safety, to the economically affluent citizen. Abortion has also been available to the patient in the lower socio-economic group but not with safety. It has been performed by untrained people, under unsanitary circumstances, with large loss of life and high morbidity. The main reason that many of us have been in favor of the new laws has been that they will make this method of contraception safely available to all economic segments of the population. Bringing this about, however, is not an easy task. For example we estimate that in New York City somewhere between fifty thousand and seventy-five thousand abortions will be requested in the next year. Hospital operating room facilities are currently so overtaxed that it is difficult to visualize how this demand will be satisfied. The patient in the lowest socio-economic group is likely to be discriminated against. There is considerable danger to the patient in these new laws, in that most of them permit interuption of pregnancy until the twenty-fourth week of gestation. While the evacuation of the uterus prior to the twelfth week of gestation is likely to be a relatively innocuous procedure and one fraught with little danger to the patient, other than the danger of the anesthetic, this is not true for those which have proceeded beyond this period of time. A number of patients will be interupted by the insertion of some substance into the uterine cavity or by hysterotomy. Both of these methods, especially the latter, present an additional risk to the patient. Certainly a risk greater than would be anticipated for normal vaginal delivery. Many of us are very concerned about the fact that some physicians may attempt the evacuation of the uterus through the vaginal route, when its size in fact contraindicates such an approach.

It seems to me that these are the methods of contraception which are available to the patient and her physician at this point in time. Later you will hear about newer methods of contraception and perhaps there is one currently under development which will satisfy our requirements for the ideal contraceptive. It should be cheap, readily available, easy to administer, not connected with the sexual act, and have no side effects.

CONTRACEPTIVE PRACTICE AND FERTILITY CONTROL IN THE U.S.A., 1965:
Summary of Findings

Charles F. Westoff, Ph.D.

During the past five years we have prepared a half-dozen or so reports on the knowledge, attitudes, practice and success in connection with fertility control in the United States. These analyses have been based wholly on the 1965 National Fertility Study - an interview survey of a probability sample of some 5,600 married women throughout the United States - and more recently on a follow-up interview with the Catholic women in that sample in 1969 in order to gauge the impact of the Papal Encyclical on their contraceptive behavior. The detailed results of these studies will be described in our forthcoming manuscript- Reproduction in the United States: 1965. The purpose of this present report is to summarize this material in a series of descriptive statements. We shall cover the subjects of women's knowledge of the basic biological facts, their attitudes toward fertility control, the extent of practice, the methods used, their effectiveness in preventing pregnancy, and couples' over-all success in controlling the timing and number of births. The summary will exclude the topic of abortion not because we suspect that induced abortion plays an insignificant role in fertility control in the U.S., but simply because our interview was unsuccessful in eliciting such information. We shall include estimates of sterilization for contraceptive reasons. Where there are important differentials by race, religion or socio-economic class we shall note these as well as trends since 1955 and 1960 based on comparisons with the Growth of American Family Studies.

It must be obvious to even the most casual observer that a lot has happened in this field in the past five years. With the exception of a few pieces of information on a selected subsample of Catholics in 1969, all of the information is derived from 1965 which in some respects is ancient history already. It happens however to be the only good data available for the most recent period. Our 1970 Study, scheduled to go into the field this Fall, will bring us more up to date again.

1. Knowledge

There is widespread ignorance among American married women about the time during the monthly cycle when a woman is most likely to become pregnant. Even with a liberal definition of the correct answer- 12 to 16 days after the beginning of her period in a 28 day cycle (including any range responses which overlap this interval) - the majority of women are uninformed, many badly misinformed. Only 41 percent (50 percent of white and 22 percent of black women) appear to be correctly informed. Accuracy of information is strongly associated with amount of formal education the woman has received but even among women with four years of high school education or more, the proportion correctly informed rises only to 58 percent.

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D. C. Dr. Westoff is Chairman of the Department of Sociology and Associate Director of the Office of Population Research at Princeton University.

2. Attitude

American women are overwhelmingly in favor of fertility control with 85 percent registering unqualified approval of doing "something to limit the number of pregnancies they will have." An additional 10 percent approve of rhythm only. Some increase in the proportion favoring contraception occurred between 1960 and 1965, most markedly among Catholic and black women. Such group differences in attitudes are rapidly disappearing.

3. Extent of Practice During Marriage

If we measure the extent of contraceptive practice by the percentage of women who ever use any method of fertility control during their marriage, we can conclude that such practice is virtually universal in the United States. Excluding subfecund women, the proportion of white women who have used or who expect to use contraception is 97 percent. The proportions for Catholic and black women are close behind although these two groups are still much slower in adopting contraception after marriage than white nonCatholic women. There is still a slight relationship with education but this is diminishing. As with attitude, the proportions who have ever used contraception have increased over time - by some 14 percent since 1955 and three percent since 1960.

4. Current Use

About 55 percent of all married women of reproductive age are currently using contraception. Of the 45 percent not using any method, the majority (29 percent) are classified as subfecund; 12 percent are pregnant, trying to get pregnant or in the post partum, and only three percent are simply not using any method despite the risk. The proportion in this latter category - those not using anything despite the risk - is much higher among black women, very young women, women of high parity, and of lower socio-economic status. The largest group difference in the proportion currently using contraception is between white and black - 57 compared to 48 percent. Older women use contraception less than younger women largely because of the increase of subfecundity with age - 39 percent of women 30-44 years of age are not using any contraception because of subfecundity alone; the comparable percentage for women under 30 is 13 percent.

5. Methods Used

The pill of course has been the big news of the sixties. By 1965 it had already become the single most popular method in use. Some 27 percent of the women under 45 who were using any method were currently using the pill; the closest competitor at the time was the condom which accounted for 24 percent of current practice. Among women under 30, the corresponding proportions were 43 percent for the pill and 20 percent for the condom; no other method claimed more than eight percent. The pill became the most popular choice for both whites and blacks. The rhythm method still dominated the picture for all Catholics but young Catholic women had already elected the pill to first place. And in 1969 when we reinterviewed the Catholic women in connection with our evaluation of the effects of the Papal Encyclical (the Encyclical seems to have had no effect on their contraceptive practices at all incidentally) the pill had gained considerably more adherents. The methods being replaced by the pill have been the diaphragm, the rhythm method, and the condom in that order.

We also had an opportunity to measure the drop-out rate of women on the pill during the first five years of its history, a subject that has been raised again in connection with the recent Senate hearings and the adverse publicity about the pill. Our findings were that nearly one-third had discontinued use after one year, nearly one-half by two years. Limiting the analysis to discontinuation for reasons of side effects only, showed 22 percent dropping by a year and 31 percent by two years.

6. Contraceptive Sterilization

In 1965 the proportion of women 18-39 who reported that either they or their husbands had undergone a sterilizing operation for contraceptive reasons was eight percent. Female operations, almost all tubal ligations, comprised five percent and vasectomies three percent. The rate five years earlier in 1960 corresponding to this eight percent was five percent. The main market for contraceptive operations are older women with at least three children; for reasons that are not wholly clear, the incidence of such operations is much higher in the West than in other regions - perhaps the greater willingness of California physicians to perform such operations. Black women rely mainly on tubal ligations but among white couples vasectomies and tubal ligations are equally used. Vasectomies among blacks were virtually nonexistent as of 1965 perhaps because, as our data indicate, black women are much more inclined to believe that such an operation reduces a man's sexual potency.

7. Effectiveness of Contraception

We have measured the effectiveness of contraception by the same technique as mortality is measured - in life table terms. The simplest statistic generated is the proportion of users who have not become pregnant by X months, a calculation we have made for each of the first five pregnancy intervals separately. The general impression is that the level of effectiveness of practice is extremely low. After one year only two-thirds have managed to avoid an unplanned first pregnancy, by two years about half and by five years the proportion successful has dropped to nearly one-third. The rates for higher-order pregnancies are somewhat better but hardly impressive. The average proportion successful for the 3rd, 4th and 5th pregnancy intervals is about 80 percent by a year's time. Two-thirds by two years and slightly less than half by five years. Success rates vary directly with education but regardless of educational level, white women are markedly more effective than black women.

8. Effectiveness of Different Methods

These failure rates are calculated for all contraception in general which of course conceals a wide variation by specific method. The proportions failing within one year of use were calculated for the five leading methods of contraception employed during the years prior to 1965. The concept of "failure" used here includes a failure to use at the time, failure to use properly or a failure intrinsic to the product itself. For each method, the failure rate was highest for the first pregnancy. Averaging the rates for all pregnancy intervals from the first through the fifth, the following proportions of failure within one year of use were indicated: Pill - 5 percent; IUD - 8 percent; Diaphragm - 18 percent; Condom - 19 percent; Withdrawal - 23 percent; Rhythm - 30 percent; and Foam - 32 percent. These failure rates correspond fairly well with previous estimates of the relative effectiveness of different methods. The fact that the highly effective pill has become so popular carries major implications for American fertility.

9. Success of Fertility Planning

We have seen that contraception is virtually universally approved and practiced but that the effectiveness with which it has been practiced has been generally low. Couples have different family size and child-spacing goals; for some these goals are clearly crystallized while for others there may be little awareness of the whole process. In the 1965 National Fertility Study we classified couples according to their reports of pregnancies as planned or not, and unplanned births as ever wanted or not, in order to determine the over-all success that American couples experience in controlling the number and spacing of their births. Among the majority of the women in our sample - those who do not intend to have any more children - one-third admit that they have already had (at least) one unwanted child - a figure that is undoubtedly an underestimate considering the remaining years they face at risk of pregnancy. Of the remaining two-thirds who did want their last child, more than 60 percent reported at least one failure to prevent a pregnancy from occurring at a time when it was not wanted. Comparable calculations for the women still intending to have more children (one-third of the total sample) indicate that 67 percent reported at least one timing failure. In summary, only about one-fifth (21 percent) of all U.S. couples who have reached what they consider to be the end of their childbearing can be classified as completely successful so far in planning their fertility - in the sense that contraceptive action facilitated the achievement of their reproductive goals.

The success of white couples in avoiding excess fertility is much higher than that of black couples; there is little difference between Catholics and couples of other religions in part because Catholic couples want more children.

10. The Demographic Significance of Unwanted Fertility

If unwanted fertility could be eliminated - say through the development of techniques that would be highly effective and require little sustained motivation, perhaps augmented by legal abortion as a back-up measure - the effect on the rate of population growth would appear to be considerable, assuming that the levels of desired family size do not change. Our estimates for the 1960-65 period indicate that 20 percent of the births occurring were unwanted. This represents some 4.7 million births. For women who were 35-44 in 1965 their completed fertility would have been 2.5 births per woman rather than 3.0. Since replacement requires an average of about 2.2 per married woman this would represent a considerable gain toward that goal.

In conclusion we should say that there is a great amount of work to be done to perfect contraception and to make it available to those who want it, since the conventional methods of contraception are very ineffective as practiced and the pill is problematic. These efforts would not only relieve the burdens of excess fertility on the poor and near-poor upon whom they fall disproportionately but they would also reduce the rate of population growth in this country considerably without requiring any attempts to change the number of children couples want to have.

ROLE OF HEALTH SERVICES
PRIVATE PRACTICE, THE GHETTO

John L. S. Holloman, Jr., M.D.

The responsibility of representing, "The Ghetto" is an awesome task. I must assume that I have been asked to speak because I am a black physician, in the solo practice of medicine in Harlem, who has been engaged in some family planning activities. I can speak only for myself, from my own experiences. I do not know if my observations, opinions and recommendations are shared by other practitioners in the black ghettoes all across America.

I am interested to note on the program, the further specilization (fragmentation) of private practice--the ghetto and the non-ghetto. While this is a reality of American life and is reflected in the practice of medicine and the delivery of services, I am nevertheless dismayed to find that after years of denial, ghetto medical care or health care for the poor, if you will, is now itself being institutionalized and almost glorified. One continues to long for a time when special services will be offered to the poor and medically deprived in order to overcome past deficiencies-but that these services will be only a part of a larger, comprehensive and unified system for bringing health care to the people. The perpetuation of poor medicine or charity medicine as we have known it, even under a new title, is abhorrent and unacceptable to me.

To place family planning in its proper perspective in the ghetto, one must look more than superficially at the ghetto itself; at its inhabitants, its problems and needs, and at the social institutions which relate to it.

Environment is defined in Webster's Third Edition as, "a surrounding or being surrounded." It is described more broadly in the same edition as, "the aggregate of social and cultural conditions (as customs, laws, languages, religion and economic and political organization) that influences the life of an individual or a community." In human development studies we have often contrasted environment with heredity. Only in recent years have we begun to understand how profoundly related these two factors are to each other in their end effects upon man.

Ghetto is defined as, "a quarter of a city in which members of a minority racial or cultural group live especially because of social, legal or economic pressure." The American Ghetto, euphemistically called the "Inner City", is a decaying, deteriorating and malignant environment. It is the product of many factors inherent in the American way of life. This national problem continues to exist because there is no national commitment to eliminate it. There is no large American city without a ghetto. New cities like Reston, Virginia, or Columbia, Maryland, through the use of careful planning, may show us ways out of this dilemma or at least how to better cope with the problem.

Presented at the AMA's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Holloman is Past-president of the National Medical Association.

The ghettoes of America are largely racial, or nonwhite areas. De jure-written or unwritten; forced or circumstantially allowed-regardless of cause, de facto segregation is the way of life in the American ghetto. Racial polarization continues at a frightening rate as blacks excluded by agricultural and farm policies are driven from rural areas to urban ghettoes. Here they join the blacks and other nonwhites who have been trapped by unfair real estate and housing practices. Escape is impossible for too many of these unfortunate Americans. All too frequently low cost housing, which is Federally aided, has been administered in such a way as to insure the continued existence of black ghettoes. Although there is a fair housing law now, recently added to our statutes, there seems to be little thought of enforcement, especially from those who cry the loudest for "law and order." It is interesting to note that 50 percent of the buildings in the world have been constructed since World War II. In the typical American Ghetto, 90 percent of the housing is more than 75 years old.

The problems of the large racial ghettoes within great metropolitan areas have been exacerbated by the white flight to the suburbs. Low and middle income whites, themselves most recently raised from poverty, have emulated the more affluent and have deserted the city and its problems, in a panic. It is this group of Americans that feels most threatened by any effort to advance the cause of the Black in America. It is this group that often reacts violently to integration attempts. It is this group which is most frequently asked to implement, in actual practice, the "liberal man's conscience."

The ghetto is like a prison in many ways. It differs from other American communities, in that it has virtually no control over the social and political insitiutions, housing, employment opportunities, police services and health facilities are controlled by persons and groups who reside outside of the nonwhite community. All too often these people have neither pride in the community nor respect for its inhabitants. Many Blacks now believe that community control is the only solution to the ghetto problems. This is also true for black control of family planning programs in black communities.

"What is the universal malady of the cities? The disease is density. Where cities foresaw density and planned accordingly, the situation is bad but tolerable. Where exploding populations hit unready urban areas, they are in disaster. Where ethnic and political conflict add further disorder, the disease appears terminal. How dense are the cities? The seven out of every ten Americans who live in cities occupy only 1 percent of the total land area of the country. In the central city the situation is tighter, and the inner core it is tightest. If we all lived as crushed as the blacks in Harlem, the total population of America could be squeezed into three of the five boroughs of New York City. The density is, in part, a product of total population explosion. At some point the whole Earth will be as crowded as Harlem-or worse-unless we control births."

In the ghetto, education opportunities are limited. The average amount of money spent on the education of a black child in America is just about one third of the amount spent on a white child. Many teachers have limited understandings of the problems of the ghetto child. They believe him to be uneducatable and their negative attitudes are often reflected in the poor

performances of the child who is held in such low esteem. Education should be a positive force for social change. Family planning and population policies can have meaningful growth in an atmosphere where one recognizes that we have now arrived at a point in time when we will have one world for all people or no world at all in the forseeable future.

There are many unmet health and nutritional needs in the ghettoes, as the litany of well-known statistics clearly demonstrates. There is a widespread inability among nonwhites to understand how family planning services can be made readily available to them, while at the same time, jobs, housing, schools and comprehensive health services are absent or denied. The credibility gap grows wider, faith in the system decreases and many have grown increasingly more impatient.

The value of human life is circumstantially cheapened in the ghetto, and the struggle for survival is constant and time consuming. The whole quality of life suffers and a racial paranoia of black genocide can be shockingly documented into reality when one correlates the vital statistics with the prevailing attitudes which the Kerner Commission describes as America's number one problem -- White Racism. Many Mexican-Americans, Indian- Americans, and Puerto Ricans feel that white racist attitudes are genocidal to them, as well.

Black genocide is the ultimate extention of white racism. Black militants have openly charged that family planning activities are overly concerned with limiting and controlling black reproduction, while paying scant attention to large segments of the white population who also have limited access to family planning facilities. There are people in America who honestly believe that the best way to eliminate poverty in America is to eliminate poor people, instead of vice versa as George Bernard Shaw suggested. They see in planned parenthood a legitimate way of accomplishing this end. Legislative attempts to limit family size based directly on family income, are numerous throughout the United States. Punitive welfare regulations have also been issued relating to family size among the poor. Proposed changes in the income tax structure, welfare regulations, operative and proposed, reflect the attitudes of our nation's planners with regard to poor people. Fifty-seven percent of black families in America are poor by accepted government standards. These families are even more poor than the standards would indicate because of the inferior quality goods and services available to blacks in the ghettoes of America.

Regardless of the white viewpoints relating to birth control and race, it has a different perspective and context for blacks. For example: as we are beginning to examine the history of blacks in America more closely, we have become more conscious of past family planning programs undertaken for us by whites. The practice of "breeding" slaves to produce a strong laboring stock, is well documented. In addition, the practice of introducing white blood into the African race through masterslave breeding, is quite visible today in our nation. Though these may seem things of the past to the majority group, they form the basis of distrusts which exist until today. Repeated throughout American history there are other instances of white planning for nonwhites which has sometimes resulted in genocide, in the extreme, and most often, in feelings of hopelessness, inferiority and degradation of spirit.

If family planning programs are to be successful they must be successful in the areas where population control is most needed. In order to accomplish this

desired goal we must introduce the concepts of humanism to the programmers and the philosophy of common need and good to the community. The success of family planning activities in the ghetto is closely related to the skill of planners and by the acceptability in the affected community. As the cry for community control increases, the necessity of involving neighborhood groups and individuals in all phases of the activity becomes a prerequisite for maximum success. Family planning clinics, free standing and devoid of any association with the multiplicity of health and social needs of the ghetto are largely a priority item for attack by the new ghetto militants. Yet when one considers the tremendous health void into which such a clinic comes, its ultimate success, given common sense guidance, is reasonably assured.

However in spite of racial overtones, most black women do want family planning. And, paradoxically, in many areas where the need is greatest, the services are often meager, poorly planned and frequently unavailable. " Many national studies have demonstrated that almost all American couples, regardless of income, class or color, share comparable fertility aspirations. In 1960, nearly nine out of ten couples wanted families of four children or less, with most preferences clustering in the two-to-four child range. Low income couples wanted the same number of children as higher income couples, and nonwhites wanted slightly fewer than white (an average of 2.9 children for nonwhites to an average of 3.3 children for whites). "

" In spite of expressed preferences of low-income parents for families in the two-to-four child range, nearly half of the children growing up in poverty in 1966 were members of families with five or more children under 18, and the risk of poverty increased rapidly from nine percent for one-child families to 42 percent for families with six or more children. More than one-quarter of all families with four or more children were living in poverty and four out of ten were poor or near poor. Unwanted pregnancies intensify family poverty.

" America's population growth since World War II has resulted more from nonpoor parents with access to family planning who have chosen to have large families than from the high fertility of the poor. This is an important and irrefutable fact, since the poor and near poor constitute only 20 percent of United States families. Hence the third middle-class child born to millions in the more affluent 80 percent of families is the decisive factor statistically in American population growth. The importance of high fertility among the impoverished must be seen mainly in terms of the burdens it imposes on the poor themselves.

"The problems related to abortion in America are shameful. Even though we are beginning to change laws regarding abortion, making it a matter of concern only between the patient and her physician, we will have to attempt also to change long standing attitudes and practices. It is in the ghettoes that the oppressive weight of unenlightened practices, inconsistent and unequal moralities and antiquated laws is felt most heavily. Discrimination based on race, sex, religion, economic class and education works to the disadvantage of the ghetto dweller. The battles now being waged in the legislative bodies of the various states, and in the courts, reveals some of the emotional turmoil which confuses and frustrates those individuals who are valiantly struggling to advance the cause of man's common humanity in a society that has opened a Pandora's Box of scientific information and technology. The preoccupation with materialism, at the expense of broader social concerns, robs man of his ability to translate the benefits of his technology to those whom Frantz Fanon has termed, the wretched of the earth.

An eleven-year study of therapeutic abortions in New York City, from 1951 to 1962, reported than only 79 Puerto Ricans and 263 nonwhites had obtained legal hospital abortions. By comparison, therapeutic abortions were performed on 4,361 white women. For every woman who receives a legal hospital abortion, 100 women obtain illegal ones, resulting in the death of over 8,000 women per year. Here again, it is the poor who suffer most severely, and in the nation the poor include a disproportionate number of Blacks. Of all the maternal deaths caused by criminal abortion in New York County, 50 percent were blacks, 44 percent Puerto Rican, and only 6 percent of the women were from other groups. The poor and the unaware are forced either to have out-of-wedlock births, contributing to the disproportionate illegitimate rates among nonwhites, or are forced to turn in many instances to folk medicine and/or untrained persons operating under the worst of circumstances. Women arrive daily in the ghetto hospitals and clinics with perforated uteri, having injured themselves with crude instruments, and many of these women who are saved can never bear children. A relatively safe, simple and inexpensive operation is transformed into an invitation to permanent maiming or death. In the case of the woman, pregnant with child, who desires not to continue the pregnancy, the choice is denied her by law and this is a violation of individual liberty. The law seems to guarantee that a woman, even within the sanctity of marriage, will not only suffer for her error, but be denied even the right to correct her mistake."

The vicious cycle of poverty inextricably entwines many ghetto residents whose unwanted pregnancies may lead to marital discord and disruption. Thus, many thousands of ghetto children are doomed to foster homes and institutional environments where optimal mental and emotional development is almost impossible. The ghetto child who survives this handicap may be so emotionally battered and intellectually stunted that he is powerless to do anything about inaugurating the remedial procedures necessary to solve his problems. The physically battered child is also a product of this situation. The human misery and waste now concentrated in the ghettoes of the world will not be ended by abortion reform or voluntary sterilization alone. It will take a broad frontal, multilateral attack in varying degrees of intensity to eradicate the ghettoes-- the shame of our nation.

Recent studies have shown that comprehensive family planning services in the ghettoes are in short supply like all other health services. Dr. James Dennis, Dean of the University of Oklahoma Medical School has estimated that a minimum of 25,000,000 people in urban ghettoes and rural areas have no access to a primary physician, and in addition, that the number may run as high as 40,000,000. An undetermined, total number of patients are receiving their family planning services through a woefully small number of medical practitioners whose services are still accessible to ghetto residents. Many of these physicians work long hours seeing large numbers of patients, and giving care which is largely episodic. Preventive care for those who have not yet developed disabling symptomatology, is almost absent. The ghetto physician is largely submerged by the flood of unmet medical needs resulting from the catabolic effects of the ghetto on the lives of its inhabitants.

Frequently these heroic ghetto physicians are criticized for doing too much while at the very same time they are criticized for not doing enough. It has been my experience that they are infrequently assisted to do better, although they are in need.

Adequate family planning does involve communication, education, examinations,

prescriptions, and long periods of supervision and follow up. Inundated by the crush of medical needs and isolated from the medical mainstream, the Ghetto physician is forced to set priorities on his time, somewhat like a battlefield triage officer. He may be compelled to default on the finer aspects of family planning such as sterility services and extensive counselling, and do little more than pass out contraceptive devices on demand because of the exigencies of time.

The information presently available regarding medically indigent patients who have received family planning assistance is not encouraging. Most patients who live in core areas with high medical need and medical indigency must rely on hospital clinics, voluntary groups clinics or more recently, OEO/NHC where family planning programs are integrated into a comprehensive package. Of course, those who are eligible for Medicaid can avail themselves of private services- if they exist.

Information available from the Center for Family Planning Program Development states the following: " (1) The involvement of private physicians in the provision of family planning services through Medicaid appears minimal; (2) As of Fiscal Year 1968, the Title XIX Program has played only a minimal role in the financing of family planning services for medically needy persons; (3) In Fiscal Year 1968, a maximum of 50,000 AFDC patients throughout the country may have received care through a private physician, three-fourths of all AFDC recipients secured family planning services from organized public and private clinics."

I would not be so presumptuous as to attempt to speak for all ghetto physicians, nor would I say that my experiences are by any means typical. Having been trained as an internist, and having practiced at the same Harlem location for nearly a quarter of a century I find that my duties as a family practitioner have evolved in many ways. Economically I am influenced by the economic status of my patients and more recently, by new methods of payment including private and union health insurance plans, Medicare and Medicaid. In some cases, I am giving health care and family planning assistance to young adults whose parents I counselled in the early days of my practice.

I have watched the physical character of my community change negatively as housing, education and services have deteriorated. I have watched proponents and opponents of the IUD vacillate through these years as different researchers have reported varying degrees of success with various IUD materials and designs. It has been interesting to note how commercial promotion has often influenced scientific opinion.

I have watched young adults and consenting minors tremulously ask for family planning information and assistance long after they needed it and long before our burdensome bureaucratic society and many health professionals were ready to give them that information.

Now that family planning is more openly discussed, physicians are deeply involved in the controversy that swirls throughout society over the use of the birth control pill. In the light of the many written words and radio and TV forums, the confusion in the public's mind is almost boundless. In my practice, the great majority of patients are requesting complete and official explanations and position statements on each new and sensational disclosure that may be made about the Pill. They look to the physician, as they should, for knowledgeable and forthright answers in this medically controversial area. Adequate explanations and assurances are indeed time consuming and often repetitious, but patients have the right to know. I believe that I could do

a much better job under different circumstances and arrangements.

In this, the Age of Aquarius, the hair of youth is almost a red badge of revolution, demanding honesty, humanity and freedom. It is to be contrasted with the Victorian past when hair was a mark of social distinction and conservative respectability. As a physician, my own credibility as a human being in the ghetto, is reduced because of the callous disregard of human dignity which our commercially fragmented health delivery system affords the inhabitants who must live in the ghetto.

Overall needs of our nation as I see them are: a new system for total and comprehensive care, freely available to all; our present family planning methods must be made more efficient; research and development of new safe contraceptive methods; and, a population policy for all Americans.

Specific ghetto needs are expressed in terms of education and services. For example, sterility services are almost totally unavailable to ghetto residents except as part of experimental programs designed primarily for the benefit of the researcher prior to refinement and later use in the more affluent sections of the nation.

Genetic counselling, available to the affluent, often researched at public expense, and almost unknown or unheard of in the ghetto could be made available. Such information should properly be a part of the health education for children and young adults thoughout their school careers, and could be of immeasurable value in their adult lives. Sex and family life education must be included as a fundamental part of health education. Although many individuals and groups may long to retreat from the Age of Aquarius to our Puritan past, it is impossible to do so.

Health, education and family planning are integrally related to each other. To plan now as we have done in the past, separating these facets of life instead of combining them, would be to repeat a tragic mistake. I favor family planning for all communities. I am opposed to family planning for the ghetto alone. I believe that a national commitment must be made now for the deliberate inclusion of all citizens into the planning for a population policy which will include the ghetto and not exclude the suburbs.

The Departments of Community Medicine now being organized in some medical schools, and rearranged in other medical schools, offer many opportunities for increased relevancy to ghetto health problems and family planning for surrounding communities. It is distressing to watch some of these departments repeat the same mistakes that have been made traditionally. It is through this portal of entry that the health needs of the community could be directly correlated with the available resources of educational strength and knowledge. The dichotomy between town and gown can be breached. The level of community health in the surrounding neighborhoods could be markedly elevated, as the medical school associations and experiences raised the level of competence and performance of the ghetto physician. Bridges of understanding would be built and more meaningful partnerships for health could be established. Special educational methods, tools and incentives may be needed to accomplish this goal.

The selfserving professional institution could become more relevant to the needs of the people of the community and mutual interest thus developed could do much to end the hostility of ghetto residents toward those institutions whose past interest has been purely clinical. Many medical schools and universities

have served the community, in the past, only when it was advantageous to the school to do so. They skimmed the clinical cream for teaching "material" disregarding the bulk of the health needs as uninteresting, or not suitable for teaching purposes.

Through the activities of family planning, medical schools could begin to shift their interest from disease and cure, to disease anticipation and prevention by establishing long range, widly responsible community associations. Ghetto youngsters could be identified before birth, as it were, in the family planning and family life program, carried through prenatal, infancy and childhood phases, including Headstart Programs especially designed to take affirmative actions which are necessary to overcome the effects of past discrimination. This requires a commitment on the part of the medical school to the community. It does not usually happen spontaneously; in some cases it has resulted from confrontation with the community. Regardless of just how it is brought to fruition, such relationships should exist in an orderly, planned way for the mutual benefits of all.

I have long contended that if access to health care is an equal right of all Americans then it should be planned in such a manner as to accomplish this end. When the President's health message to Congress stated that, " we should establish a national goal for the provision of adequate family planning servies within the next five years to all those who want them, but cannot afford them," I find myself in the position of agreeing and yet of feeling that the goal is too modest and is discriminatory in conceptualization. Without suggesting that the program was designed for those who cannot afford contraceptive services, I feel that as a part of our right to health care, all should have access to adequate family planning.

One of the " now " actions which we can take is the coordination of all our health efforts through a sensible health system based on an understanding of the needs of our present and future populations, with a high priority given to the quality of life for all. Such a system has been outlined in the 1970 Physicians Forum pamphlet, " A National Health System." It is based on healthy communities and progresses nationally through health regions. It is a health delivery system covering all facets of health. It would provide personal and environmental health services, including pollution control. It also includes family planning, health education and health manpower production. It is an outline which could be used as a basis for planning and subsequent action.

The American ghetto needs exactly what the rest of America needs and wants ----only more of it and sooner. As long as ghettoes exist in America we must work unrelentingly for their elimination. We have the ways and the means and never before have we been closer to the fulfillment ofthe American promise. Family planning and sensible population policies, free of all discriminatory philosophies, are mandatory for our survival as a species.

Unmeasured human misery, mental and physical can still be avoided if we simply free ourselves as much as possible from our narrow vested and myopic concerns. We must commit ourselves to those actions now which are so vital to our children and to the world which they will inherit and hopefully inhabit--in peace.

THE NON-GHETTO

Irvin M. Cushner, M.D.

Ladies and Gentlemen, I am moved to digress from my prepared manuscript and to open by commenting that I share in the concern and in the disdain expressed by my colleague that we must divide the private sector of medical practice into two compartments, and I dedicate my presentation to the concept that there is no purpose in underscoring differences in problems, differences in family goals or family aspirations, between these two components. There are no such differences. The differences are in availability of service, and I emphasize that my presentation of these differences is with the hope that this will move us to eliminate those differences so that we might practice and deliver health care in an equitable fashion.

A participant in a program such as this has a tendency, privately or overtly, to indulge himself in a form of chauvinism--an indulgence which allows him to believe that only his presentation finally brings us to the core of the subject. I confess to a bit of such chauvinism at this moment. I am mindful of the title of this Congress, "The Population Problem and The Physician." I review the material which we have heard so far in the past two days. The problem and the programs have been defined and described at the global level, at the domestic level, for our country, for our states, for other local jurisdictions. The methodology which might be utilized in such programs has been outlined--the sociological, the biological, the clinical.

I submit to you that we have now come to that part of the program which is where the action is or should I say, where the interaction is--between patient and physician, between patient and physician's helper. Indeed, it is in this office, in this clinic, in this examining room, in this consultation room, in this hospital bed, that the individual might participate in population stabilization or not. I submit to you that the message of this Congress is clear--namely, that if in the past the individual physician has not so participated, in the future he must. My presentation will attempt to outline the ways in which many, if not most physicians can and should become aware of the roles which they play in this most pressing socio-medical need. But I hasten to add that I speak not exclusively to or for my gynecologic colleagues but to out nongynecologic colleagues as well. And may I digress at this moment to say that I really do not speak to you. It is not the physicians who attended this conference that concern me--it is those physicians who did not. It is to them I speak, and hope that the participants of this Congress can carry these messages, from the other speakers as well as myself, to your communities.

My comments are based upon experience gained as a provider of service and as an imparter of information to a nonghetto population which has included the affluent, those of moderate means, the border line indigent, and some indigent. I will present my comments as answers to six questions. What is family planning in a nonghetto population? Who are the patients who seek these services? Under what circumstance do they identify themselves or become identifiable? What are the services they request? What is our ability and our inclination to provide such service? How can we enhance our ability to deliver this care and thereby to enhance the participation of the physician in population stabilization?

Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Cusher is Director, Center for Gynecologic and Obstetric Social Studies at The Johns Hopkins University, School of Medicine.

What is family planning service in a nonghetto population? I submit to you that it is the providing to patients, at their request, and if there are no discernible contraindications, the information and service for anticonception, antinidation, and the termination of an already implanted conceptus. In addition to providing this service and information when requested, it also includes making the patient aware of the availability of such service if the need should ever be felt.

Who are the patients who seek such service and under what circumstances? What are the services they request? I list them not in the order of volume or complexity or time commitment or costs; rather I list them in the sequence of the life cycle of the female patient. Within that framework we are asked for information, for counselling, and for help with fertility regulation by patient's experiencing or soon to experience the following events: the first coitus, the first pregnancy, the "Nth" pregnancy, the final pregnancy, the premenopause. In addition to these life cycle events, there are requests from patients who come to us for gynecologic illness or for the annual health survey.

Until recent years, particularly prior to 1960, the patient requesting service because of imminent or recent first coitus identified herself as the premarital or recently married female. She was requesting, in essence, a health survey, her first pelvic examination, her first "Pap. Smear", advice and service in fertility regulation, and information and counselling on the sexual aspects of married life. Such patients continue to come to the gynecologist and other physicians. However, in more recent years, they have been joined by another groups of patients requesting similar service, similar information, similar counselling. These patients, however, do not present themselves because of impending marriage. Rather, they request this service because the coitus is already occurring or is imminent. They may be direct and ask for help with prevention of pregnancy or they may present with some other gynecologic complaint which they feel might be helped by what they call "hormone treatment." They might be in their 20's; they might be in their teens; they might come with their parents advice and consent, or without it. They might ask for advice regarding whether or not to engage in coitus, or they might seek sexual counselling about their inability to achieve orgasm.

The patient who requests service in association with her first pregnancy may present with a pregnancy which was planned, desired, or undesired. She is more than likely to be in her 20's; she may be in her teens. She may be married or unmarried. If the pregnancy is unplanned, she will declare early her need for a better method of fertility regulation to be provided after delivery. If the pregnancy is not desired, she may request termination of that pregnancy. If she is married with a planned and desired pregnancy, the service will be requested at the time of the post-partum examination when she might request renewal of her previous method. Or, she might reveal for the first time, and to the first person, her physician, that her method of fertility regulation is in itself a cause of a sexual or a marital problem.

All that has been said of the first pregnancy can also be said of the patient with the "Nth" pregnancy. With the additional comment that as the number "N" gets higher and higher, the need and desire for more effective means of fertility regulation becomes more desperately felt, above and beyond any sexual, social, religious, or cultural consideration. This is particularly true in requests for surgical contraception and abortion.

The patient who has decided that she has had her final pregnancy may request a more permanent form of contraception--namely, surgical. She and her partner will ask for a discussion of the availability of such procedures, of their safety, of their effectiveness, of their wisdom and/or the propriety of applying such procedures to either the male or female. The most common pregnancy orders which bring on such requests in the nonghetto population are the third, fourth, or higher, although requests are now being received from patients having delivered their second child. May I, at this time, respond to some comments made this morning by Doctor Kohl. There are indeed institutions in this country, and I am proud to say that ours is one, in which a request for surgical contraception is honored, provided there is no surgical contraindication, and this is irrespective of age and parity. If it is the female who decides upon the surgical contraceptive procedure, she may request the termination of her menstrual function as well, by hysterectomy rather than by a tubal procedure.

Needless to say, any gynecological patient regardless of her initial motivation for requesting service, might identify herself or be identified as a person in need of family planning service. This is regardless of whether she comes for a benign gynecologic illness or whether she has come only for the purpose of the health survey and Pap. smear. The asymptomatic patient is using this occasion more and more frequently to request of her physician that she be updated regarding newer methods, more effective methods, methods which would allow more spontaneuos sexuality than perhaps the older, more traditional method which she has been using.

Finally, there is the premenopausal patient who is in the twilight of her reproductive potential but not yet at the end. Her request for family planning service may be motivated by a desire to be more contemporary, as a result of what she has read and heard, a desire for the more spontaneous sexual behavior which she associates with the so-called "sexual revolution." On the other hand, she may now be so desperate in her desire to prevent pregnancy, at this time in her life when her aspired family size has been reached, when she has embarked on a resumption of her career goals, that she may want more effective and more permanent methods. She may need very careful counselling, lest she be under the false impression that her risk of conception is so markedly reduced that she could now discontinue all methods of prevention.

What then is our ability and our inclination to provide such service, to impart such information when requested? What if it is not specifically requested? What then is our role? I think it is appropriate that we ask some questions of ourselves. I am raising the issue of ability and inclination. Are we indeed able? Are we indeed inclined? Do we ask all the questions that should be asked? Do we observe and make observations as we should? Compare, if you will, our talents and our behavior during the course of the general medical health survey, when our goal is to discern physical or emotional disease, against our professional behavior in the discerning of sexual and reproductive problems. Our taining and our education has made us able to perform the necessary physical examinations and to discern the need for laboratory examinations and consultations to detect the presence of serious physical or psychiatric illness. It can also be stated that we seem to be strongly inclined to carry out those procedures and to make the observations necessary for such detection.

Of crucial importance, we must ponder whether our education and training, indeed our own personal orientation, has made us as able or as inclined to discern the need for help in fertility regulation or in sexual counselling. Do we ask all that should be asked? Do we ask the tearful depressed patient with the undesired pregnancy whether she has considered termination, if she does not ask herself? Shall we indeed ask when there is no longer any law to restrict us? Do we ask of the counple already with a larger family than that to which they have aspired and that they can afford and who have found either unacceptable or ineffective several methods of contraception, do we ask them of their possible interest or need for a more permanent or surgical method? Are we able and inclined to be of help, to offer our services to the partnership whose sexual incompatibility is specifically related to their method of contraception and who are prepared to throw caution to the wind in order to be more fully able to express their love for each other. There is, as you know, ample evidence from the studies of Lief and others that physicians and medical students are no better informed about matters sexual than their counterparts in other professions. Indeed, except for the gynecologist-obstetrician, many if not most physicians, are poorly informed about the details of fertility regulation itself.

We come then to the last question. How can we enhance our ability to deliver this care, to more fully participate in population stabilization? Obviously, this will entail some new directions in the education and training of the physician, a subject to which I shall not address myself in deference to the speaker who follows me, himself a courageous pioneer in the redirection of medical education and training toward the goals of this conference. I direct your attention, rather, to factors other than the lack of education and training which bind us in our ability to provide this service:

We lack time. The gynecologic as well as the nongynecologic physician is tested to his capacity to provide medical services to larger numbers of patients.

We are bound by restrictive laws, and whey they are repealed, by self-imposed rules and regulations. We are too frequently bound by the desire to impose our own moral judgement upon the desires and needs of our patients.

We must find the time. We can find the time, by finding additional personnel with whom we can join hands as a team. The development of paraphysician personnel to counsel and to provide service is a desperately needed addition to our health care delivery team. In the discipline of gynecology and obstetrics, our para-physician personnel is already tried and true. The nurse-midwife is a known factor. We know what it takes to produce her. We know what excellent service she can provide. Who could really have any doubt that such a person already trained in giving complete obstetrical care, could not also be trained to provide all methods of fertility regulation under the same arrangement of medical supervision for which she now provides obstetrical service. Other types of health care assistants could be developed and trained to do some of the procedures now carried out by the physician, thus allowing the physician time, to concern himself with his patients needs in family planning. We need to accept, to understand, at least to be aware of changing values, changing traditions, changing laws. We must be prepared to view our patient as a human being in need and provide that patient with the competent, nonjudgmental, and compassionate service which is our charge.

Finally, I ask that we physicians begin to apply some of what we have learned here from our demographic, sociological friends. I refer here not to our professional talents in delivering care, but rather to the opportunities we have an individual physicians, and as the organized medical community, to join hands with the nonmedical community in making people aware, informed, concerned, committed. Don't sell short our influence in community and government. Our own waiting rooms can be important sources of informational and educational materials. In our consultation rooms, even if we do not want to appear coercive or suggestive, let us at least not obstruct the desires of those patients who would voluntarily regulate their fertility. Let your voices be heard by school boards, by legislatures, by local health agencies. Demand of them that information and education and service and counselling be made available to the entire community. As but one example of such joint effort, I mention the very rewarding experience which I and many of my colleagues in our department of The Johns Hopkins Hospital have had in participating with Planned Parenthood of Maryland in workshops and training courses for teachers, social workers, physicians, clergy, and other adult groups, and in teaching human sexuality, upon request, from colleges and high schools in and near our community. The opportunity to make such groups aware of the population problem should be obvious to all.

In closing, I know that I have been demanding in this presentation, I know that I have asked you, my physician colleagues, and you, our nonphysician coworkers, to give. To give time, to give service, to give information, to give of yourselves. I ask of you one thing more--if we have not gathered here in vain, if we have at least become aware of the possible threat posed to the quality of life by continuing the present population growth rates, if we have at least learned this, than I ask you not only to give, but also to care. Care enough to participate in population stabilization--if not for yourselves, if not for your patients, then for your children and your children's children. You should care. You must care. You must participate.

COMMENTS ON PROFESSOR NOTESTEIN'S STATEMENT ON WORLD POPULATION

MILOS MACURA, PH.D.*

Professor Notestein's summary of future population trends and his analysis of foreseeable population problems in our dichotomized world is a masterpiece of synthesis and clarity. As a distinguished professor of demography, the first Director of the United Nations Population Division, and the first President of the Population Council he is one of the most knowledgeable experts in his field. It is indeed an honour for me to comment on his statement, an honour that is also a pleasant task, for I fully agree with his scrupulous forecasts and careful diagnosis. I can only endorse Professor Notestein's proposition that modern population problems are still the result of demographic imbalances and social and economic maladjustments; that the future of the less developed societies lies in the rapid modernization of their socio-economic conditions and in substantive change in their reproductive pattern; and that the world is much too interdependent to tolerate large-scale disasters and crises. International solidarity with respect to development and population, although far from satisfactory, seems to continuously gain prominency and support - a trend which is evident, inter alia, in the latest decisions taken by the United Nations Economic and Social Council concerning the programmes and policies during the Second United Nations Development Decade.

If I still have to offer a few comments, they are perhaps more to substantiate Professor Notestein's points than to disagree with his analysis. For lack of time and because of the complexity of the subject, I will restrict myself to those problems which appear to me to be the most critical. Of course they are, and will continue to be, located in the less developed regions of the world.

The first problem is that of population growth. According to our best knowledge the population of the developing regions will continue to grow rapidly, and in spite of appreciable declines in the growth rate absolute increases will be difficult to manage. According to the medium variant of the recently revised United Nations projections there may be a steep decline in fertility with a visible, although not proportionate reduction in the birth rate (because of increases in reproductive stock), combined with rapid improvements in life expectancy and very rapid reduction in the death rate. The specific effects of population trends may be exemplified by the prospective demographic situation in South Asia. This is a region of 1.1 billion people, with a high but not extremely high growth rate. Out of nineteen sovereign nations in the region ten have adopted or are about to adopt governmental programmes of fertility control covering 93 percent of the regional population. The current population estimate for the region is, as already mentioned, 1.1 billion; its estimate for the year 2000 is above 2.3 billion. During the period under consideration, the gross reproduction rate may drop from 3 to 1.6 or by about 47 percent, the crude birth rate from 44 to 27 per 1000 (by 40 per cent), while the expectancy of life at birth may increase from 48.8 to 65.8 years with a consequent sharp reduction in the crude death rate from

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Dr. Macura is the Director of the Population Division of the United Nations.

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* The views expressed in this paper are those of the author and do not necessarily reflect the opinions of the United Nations.

17 to 7 per 1000 (about 58 percent). The final result may be a decline in the rate of growth of population from 2.8 to 2 percent per annum, a decline equivalent to about 28 percent, which is in sharp contrast to the marked reduction in fertility and crude birth rate. It seems paradoxical, but it is highly probable that the demographic situation of South Asia by the end of the century will be similar to the situation in the United States in the early 1950's at least as far as the gross reproduction rate and life expectancy are concerned, but will not differ from the situation in the less developed regions in the early 1950's in respect of the growth rate of population.

The second problem is an economic one. There have been definite economic improvements in the less developed regions during the past two decades. However, such improvements have been insufficient in per capita terms, because of inherited economic backwardness, combined with inadequate technology and outdated institutions. The gross domestic product of sixty-seven developing countries surveyed for the purpose of the United Nations Second Development Decade grew at a rate nearing 5% per annum in the 1950's, at 4.5% in the middle 1960's, and at 5% by the end of the decade. Owing to the growth of population, the per capita economic growth was slower in the 1960's (about 2.3 percent per annum) than in the 1950's, when it was slightly over 2.5 percent. While some small countries with rich natural resources had a growth rate over and above the average, a couple of countries had a negative per capita economic growth rate.

It is indeed gratifying to see the economy of the developing countries growing faster than it used to before it achieved national independence. But the actual gains in the per capita gross domestic product during the last twenty years were minimal - about US $70 - from US $108 in 1950 to an estimated US $175 in 1970. Had the population growth rate declined from 2 percent in the early 1950's to 1 percent per annum, by the late 1960's the per capita increment on the gross domestic product would have been higher - about US $100, which is a slight improvement with no significant impact.

In order to be able to assess these trends we should bear in mind that, during the same period, the most industrialized nations had improved their economic performance by US $1,600 (such as the USA) and by over US $1,200 (for example, the USSR, Sweden and a number of other countries). Without the intention of making any unreasonable comparisons, we must be aware of the growing economic gap between the rich and the poor countries which is accompanied by a growing demographic gap. We should also be aware that it is very difficult, if not impossible, to promote employment, increase the production of food and other essentials and improve the level of living of billions of people, given a per capita gain in gross domestic product of only $70 over the twenty year period.

The third problem to which I would like to refer is a social one. Fertility as a demographic phenomenon, which, under prevailing circumstances is the only variable which might bring down population growth to a reasonable level, depends upon millions of decisions or the lack of millions of decisions on the part of individuals. Of course, productive employment, rapid improvements in living conditions, a more abundant life, better education and an adequate status for women all support the change in the reproductive behaviour of individuals. But, since radical change in economic circumstances is a long-range process, the education of people and the creation of the socio-psychological climate conducive to an awareness of the inter-relatedness between family size

and improvement in levels of living is very badly needed. Active support to governmental programmes aimed at controlling fertility by all professional groups involved, and particularly by the medical and paramedical profession is therefore essential, as is the development of better contraceptive technology and measures inducive to child spacing.

Professor Notestein's moderate optimism concerning population prospects of the less developed world deserves full attention. In the last part of his statement he considers that innovation, involvement of governments, success of some family planning programmes, increasing international co-operation, as well as growing popular acceptance of the small family norm and the prospects for better technology may contribute to a significant reduction of fertility accompanied by a substantial decline in population growth rate. He correctly places emphasis on action by governments, international agencies and private organizations, as well as on the application of knowledge in family planning and development.

Of course, I can only agree with Professor Notestein that a rapid development of the less developed societies will increase the size of those segments of population which are better educated, economically more productive, healthier, urban, better off, and which have other characteristics of a "developed" population. There is little doubt that these segments will increasingly tend to limit the size of the family, and that family planning, education and services will speed up the process of fertility control. However, what matters most is the pace of development, both economic and social, and the tempo of change in social norms governing fertility behaviour and reproductive practices. The speeding up of progress - either by increasing the rate of economic growth to 6 or 8 percent per annum, or by reducing gross reproduction rate to nearly 1 and the infant mortality rate to about 30 - is, however, not at all an easy task. This is perhaps why we need better knowledge, deeper involvement and more action at all levels of the World's societies.

COMMENTS ON DR. PHILIP M. HAUSER'S REMARKS

Conrad Taeuber, Ph.D.

Doctor Hauser spoke of a population explosion, a population implosion, and a population displosion. As applied to this country I find such terms are somewhat more dramatic than the long-term developments which they are intended to describe. If there has been such a development as a population explosion in this country it lasted for some 14 years, beginning with 1947. In that year we had the expected large number of babies born, the result of the end of the war and the establishment of many new families which could not be started while hostilities were going on. The movement of population to big cities goes back to the beginnings of our national history. In recent years, there appears to have been a slowing down of that movement. The dispersion of population into the suburban areas is a matter of at least a half century of development, for ever since 1920 the suburban portions of our metropolitan areas have been growing more rapidly than the central cities. In more recent decades, in fact, many of the larger central cities have lost population, at the same time that their suburban areas were gaining rapidly.

The postwar baby boom was not a return to the large families of our pioneer generations. It reflected rather a significant increase in the number of women who took part in child-bearing. Compared to even a generation earlier, there have been some important changes in American patterns of family formation and child-bearing. A larger proportion of women marry and they marry at younger ages. A larger proportion of married women have children, and they complete their child-bearing within a shorter period of time. In 1960, only about seven percent of women 30-34 years old had not yet married. Twenty years earlier the proportion had been about twice as large. The proportion of married women who have no children has decreased significantly. The no-child or the one-child family has given way to the two or three child family. It is, of course, much too early to know what the effect of the ZPG campaign and announcements and pledges is likely to be. Only about one-third of the 18-24 year olds are college students. The high Post War rates were high only in relation to earlier rates in the United States and the rates in northern and western Europe.

The rate of growth in the United States has declined further and was only about one percent last year, and about one-fifth of that was due to net inmigration. However, a one percent rate of growth means an annual increment of about two million each year.

A major feature of the development of population in the near future is the fact that large numbers of young people will be reaching marriage and childbearing age, a kind of echo of the relatively large number of births some 20 years earlier. Unless they depart sharply from the patterns which have been set by young people throughout most of the last decade and a half, the number of births will soon increase. It is necessary at this point to make a clear distinction between birth rates or fertility rates and the number of births. Even if fertility rates were to remain stationary, the large increase in the number of young women would lead to an increase in the number of births. In 1970, the number of persons reaching their 23rd birthday is about a million more than was the case in 1969. In 1947, there were 3.8 million births. Up to that time this was an all time high in the number of babies born. However, we soon exceeded that number and from 1954-1965 the number of births each year exceeded 4 million. Last year we had dropped back to 3.6 million. The number of young people coming of age will continue at a relatively high level through the 1970's and into the 1980's. The large number of young people reaching marriage age has recently been

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Taeuber is Associate Director, Bureau of the Census.

reflected in an increase in the number of marriages. Unless there is a drastic change in the popularity of marriage and childbearing, the number of children under five in 1980 will be substantially greater than in 1970.

Although Doctor Hauser did not imply that the availability of the relatively new oral contraceptives and the IUD will lead to reductions in birth rates and numbers of births, there is so much misunderstanding on this point that it may be worth a moment's consideration. The greater availability of more effective contraceptives may result in some differences in the timing of first and subsequent children. It may, of course, have important effects on the total number of children born. It should be noted, however, that the current decline in birth rates goes back to 1957--several years before the pill became generally available and even more years before the IUD was anything other than an experimental device. It is useful also to remember that the low birth rates of the 1930's were accomplished before either of these recent developments were known.

As Doctor Hauser points out, variations in birth rates in time are nothing new to the United States. In 1968 we had the lowest birth rate (births per thousand of the population) in our history. However, this rate was little different from those which we had achieved during the depression years. The last 25 years have shown that birth rates and the number of births can change rapidly. With increasing knowledge of control methods and increasing effectiveness of the methods which are available, there may be rapid shifts in the next years as people, especially the young married couples, change their evaluation of their own situations and prospects. Annual changes in rates are particularly subject to fluctuations. Therefore, the interpretation of changes from year to year is difficult, and total lifetime fertility becomes the critical factor.

It has long been known that there are important differentials in fertility. Fertility in the urban areas is lower than that in rural areas; fertility is lower as educational levels are increased, and also as income levels are increased. These differences are clearly observed in any comparison as of a given point in time. However, as has been demonstrated in the experience in the United States since the end of World War II, it is dangerous to argue that they necessarily hold equally over time. The so-called baby boom came in spite of rising educational and income levels and at a time when the population was becoming increasingly urban and metropolitan and women were increasingly employed outside the home. In effect, the differentials were continued and at the same time the levels of fertility were raised. Rising educational and income levels are clearly indicated, so is increasing urbanization and great labor force activity by women. However, this does not necessarily portend lower fertility.

In terms of public policy and public action, the gross numbers which Doctor Hauser cites need to be supplemented by some attention to migration. Americans have always been a highly migratory people. Over the last twenty-two years there has been an annual measure of the number of persons who have changed their residence during the year. The proportion has been a fairly steady 20 percent, with the percentage higher for the persons in their late twenties and lower for the persons of more advanced ages. Since 1960 there have been losses of population in approximately one county out of every three. There have been more persons moving out than moving in for about 1800 of our almost 3100 counties. About three-fourths of our total population growth has occurrred in the metropolitan areas, with most of that in turn taking place within the suburban sectors of those metropolitan areas. The relative stability of population numbers--or even decline--in the population of our central cities is the result of some substantial exchanges of population. The central cities gained some 2.7 million black persons, with their relatively higher proportion of young children, and lost some 2.1 whites with a somewhat higher proportion of older persons.

The consequences of such population shifts may be illustrated in relation to three major concerns: medical care, housing and education. The migrants take with them a need for housing at the destination areas, but do not take their housing with them. Likewise the migration of school-age children to an area may result in an increased demand for school rooms and teachers in the relatively concentrated destination areas without a compensating decline in the demand for the same educational facilities in the areas of origin. In fact, as populations in some of the areas of heavy outmigration decline, the cost of maintaining essential public services may actually increase. In concentrating on national trends, it is useful not to overlook the fact that these trends eventually are reflected in developments at local levels. Migration is not the only factor which makes for differential rates of growth. There may also be differences in the natural rates of growth of population groups. Two-thirds of the increase in the black population of the central cities is the result of an excess of births over deaths--only one-third is the result of migration.

It is, of course, an easy matter to disagree about the course of future developments. It may be necessary only to comment that the Census Bureau is planning to issue another set of projections of future population growth, and will then utilize at least one set of assumptions which falls below the lowest one which was used in the 1967 projections to which referred. A population of 300 million by the year 2000 may not be as likely as it seemed some years ago. However, it seems unlikely that the population at the end of the century will be very much below the 300 million mark. We have recently been consulting with a number of experts concerning the levels of future fertility which should be considered in a new set of projections.

Projections into the future normally take off from some past developments. Here the choice of the base line or period becomes important. The projections of metropolitan growth to which Doctor Hauser refers were prepared in the light of the most recent developments for which estimates were available at the time. If similar projections were to be prepared today, they would most likely lead to a conclusion of somewhat less rapid growth in the future than is shown in the figures which were used in this presentation. Developments in more recent years seem to signal some slowing down in the relative rate of growth of the metropolitan areas. Whether this is a long-term development, or simply a temporary one, can, of course, be determined only after the fact. The differences in the final outcomes would be matters of degree--there is no change in the long-term trend of more rapid growth of the metropolitan areas.

Population growth has important political and other social implications, whether one considers national growth or the differential rates of growth as between States, between cities and their suburbs, or those between metropolitan and nonmetropolitan areas within the States. Here we may well see a phenomenon which has long been known as cultural lag. The term was initially intended to characterize the observation that changes in the technology and machinery available to society seemed to proceed much more rapidly than changes in the social and political sectors of the culture. Populations trends also may move very much more rapidly than our adjustments in terms of governments, public facilities and other arrangements which are needed to supply the nation with needed services and facilities. On the one hand it is essential that we consider the possibilities of causes and effects of population trends in relation to many public programs and many of our contemporary problems. However, it would be a mistake to consider population trends as the primary determinants in such matters as urban problems, traffic jams, crime and drug problems and all the other ills of which we are so keenly aware. The problems and their cures are matters of complex social relationships, and most of them can be dealt with if we are willing to devote the

necessary resources to their solutions. Rapid population growth may serve to make solutions more difficult, a slower rate of growth may facilitate certain ameliorative measures. The demographic developments by themselves are neither the cause nor the cure of these matters.

Continued population growth in the United States seems clearly indicated for some time into the future. Even if women now entering childbearing should suddenly drop their completed fertility to the replacement level of about 2110 children ever born per thousand women completing the childbearing years, we would continue to grow well into the next century. Overall population growth is not necessarily closely related to the problems which Doctor Hauser listed and as he points out. It would be most unfortunate if the current public concern with the rate of population growth were to divert us from dealing with the tractable and seemingly intractable problems with which we must also concern ourselves because they are here and which are only minimally affected by slower or faster population growth rates, at least in the short run.

STABILIZING U.S. POPULATION GROWTH: A POLITICAL STRATEGY

Senator Joseph D. Tydings

Mathew Arnold once wrote that nothing is more difficult than bringing thought to bear on politics. This has certainly been the case with respect to the issue of population growth in this country.

After nearly a decade of actively discussing the population problem, we still lack an accepted political strategy for dealing with that problem; no practical plan exists for translating concern into remedial action.

Instead, we have fallen into what appears to be an endless academic debate. One which, unfortunately, is becoming more polarized and polemical.

One side in this debate warns Americans that, unless U.S. population growth is halted immediately with whatever means necessary, the survival of the nation is in grave jeopardy. The other side retorts with reassurances that population growth presents no real problem for the U.S. in the forseeable future; that improved family planning programs are all that is required.

Now virtually none of the parties to this debate would actually subscribe to these simplified, extreme versions of their positions. Yet, it is these simplified versions fashioned for propaganada purposes that currently are shaping public debate over the population issue across the country and, increasingly, in the Congress.

It is imperative that we break out of this polemical trap, and break out soon. Otherwise, the public is either going to lose all interest in population growth as a national concern. Or people will be so frightened by some of the alarmist proposals for population control currently being offered largely for dramatic effect--such as compulsory vasectomies after two children or sterilants in the drinking water-that population will become a politically impossible issue.

In short, unless we can change the character of this debate, the opportunity to intelligently deal with the issue of population growth will be lost in this country no matter which side wins.

None of this is meant to imply that real differences do not exist among experts over the nature of the population problem, its consequences, and the means and urgency of a solution. An enormous amount of biomedical and behavioral research remains to be done in the field of population.

Yet, as a layman who hardly qualifies as a population expert, it nevertheless seems to me that a broad enough consensus exist about certain aspects

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Joseph D. Tydings is U.S. Senator from Maryland.

of U.S. population growth that it is now possible to move beyond this counter-productive academic debate and begin defining a political strategy for dealing with the population problem.

In the remainder of my remarks this morning, I shall attempt to describe this consensus and the political strategy which I believe follows from it.

A logical starting point is a fact we can all accept; the fact that eventually we will have to stabilize population growth. Zero population growth is simply mathematically inevitable in the finite world.

Likewise, zero population growth is inevitable in a finite nation. As the National Academy of Sciences 1965 study, The Growth of U.S. Population, put it, "...if present fertility and mortality trends persist, (U.S.) population will surpass the present world population in a century and a half. And in about 650 years, there would be one person per square foot throughout the United States. In the very long run, continued growth of the United States population would first become intolerable and then physically impossible."

Therefore, differences aside concerning the nation's carrying capacity and the time it will take to reach that capacity, there is no real debate over the necessity to eventually stabilize U.S. population growth. The issue is rather when and how.

As for the question of when to actively establish a national policy to stabilize U.S. population growth, those who counsel delay do so on the grounds that overpopulation will not be a serious problem in this country for some time to come. By devoting scarce public resources and attention to a matter which is not really urgent, this argument goes, we run the risk of using the population problem as an excuse for avoiding more pressing problems and spending limited tax dollars where they will not yield the greatest marginal return.

I sympathize with the concern that population not be exploited as a surrogate for other national problems that are either more complex or costlier to solve.

Stopping population growth in the United States today would not eliminate any of our serious problems.

Our central cities would still be deteriorating, slum-ridden jungles breeding crime and despair.

Our environmental crisis would remain critical. For it is high levels of consumption combined with a sophisticated and powerful technology that accounts for the major facets of environmental pollution in the U.S. today. And as recent Census Bureau statistics reveal, if we could maintain our present population level of 203 million over the next 15 years, comsumption in the U.S. supported by current technology still would increase 90% by 1985 owing to the rapid growth of personal income in the country.

However, having conceded the danger of advocating zero population growth as an answer to all our problems, it is equally true that a growing population makes the solution of nearly all our problems more difficult and more expensive.

While total U.S. consumption could be expected to increase 90% by 1985 without population growth, with the continuation of the present U.S. birth rate, consumption will increase by 120% in the next 15 years. Clearly, cleaning up our air and water will be far more costly with 250 million Americans than with 203 million.

Similarly, rebuilding our cities over the next 30 years will be rendered considerably more difficult and expensive by the appearance of between 78 and 120 million additional Americans in our urban areas by the year 2000.

And more importantly, for our purposes, there is strong reason to believe that it may be less expensive on a per capita basis to slow down population growth than to shoulder the costs of a larger population. In other words, a national policy to stabilize population growth could well be a sound investment of U.S. tax dollars at the margin.

The case for delay is further weakened when placed in a global context. There is no denying that the U.S. could survive an additional 100 million Americans in the next 30 years, though there would be heavy costs involved; the doomsday arguments sometimes used to support zero population growth for the U.S. are both irresponsible and counterproductive.

But the planet as a whole, particularly the underdeveloped world, is being dangerously threatened by unchecked population growth. Most of Asia and Latin America cannot survive a population doubling time of 25 years or less without experiencing famines, massive unemployment, and unceasing cycles of revolution and repression.

If we intend to convince the developing nations as co-habitants of our Spaceship Earth that their progress and survival as viable states demands a dramatic drop in the birth rate, it will have to be by example. Proposals for coercing these nations into such a course of action ignore the lessons of past U.S. attempts to elicit specific national behavior by threatening to withhold economic and other forms of assistance. No nation will move to cut its birth rate until it is convinced that such a policy promotes its own interests.

If the U.S. is to supply any leadership in this area, we must begin by practicing what we preach.

Finally, perhaps the most compelling reason for initiating a national population policy now is the fact that even if our net reproduction rate were reduced to unity tomorrow, it would probably take 65 to 70 years for total U.S. population growth to fully stabilize. One cannot suddenly decide that the time for zero population growth has arrived and expect the population to stabilize overnight. Anyone who believes that halting population growth by the year 2035 represents a sensible goal for the U.S. is condemned by the demographer's calculus to begin today.

In summary, providing care is taken to avoid claming zero population as a national panacea, there are few costs associated with initiating a national population stabilization policy now. At the same time, there are a number of possible benefits from proceeding immediately.

Therefore, without being forced to debate questions of the precise consequences of unchecked population growth in the U.S. and the relative urgency of halting that growth, I think we can all at least agree that beginning a policy to stabilize U.S. population growth at this time represents a prudent course with a minimum of risks.

This brings us to the third dimension of the population problem: the question of how to stabilize U.S. population growth.

In many respects, this is more an issue of political philosophy than of biology. For much of the debate regarding the best means to slow population programs should be voluntary or compulsory.

When faced with such decisions, I rely on the libertarian principle that the community should only deprive the individual of freedoms when the exercise of those freedoms constitutes a clear danger to the survival or well-being of the community; and only after all reasonable alternatives short of compulsion have been tried and found wanting.

The United States has had no previous experience with attempts to slow the birth rate. We have no way of knowing whether voluntary incentives and public education will be sufficient to stem the population growth that is beginning to threaten us. Until we exhaust the possibilities of developing effective voluntary means, recourse to compulsion is inconsistent with our traditional commitment to maximize individual freedom.

Furthermore, even if a compulsory program of population control were deemed necessary at this time, such a program would not be politically feasible. Strong resistance still exists in Congress to programs promoting voluntary family planning, much less compulsory population control.

Thus, for both philosophic and political reasons, proceeding along voluntary lines to achieve population stability is the only practical course in the coming decade.

These, then, are the three facts or assumptions about America's population problem which I believe most population experts could accept whatever their other differences: the inevitability of zero population growth, the prudence of initiating a stabilitization policy now, and the philosophical and political advantages of pursuing voluntary rather than compulsory methods of population control in the forseeable future.

If a crude consensus of the demographers, ecologists and citizen organizations interested in the population issue can be built around these assumptions, then I believe we can move beyond debate to meaningful action.

The political strategy for stabilizing U.S. population growth suggested by these assumptions is a multi-stage process.

As you well know, most issues --regardless of their import and urgency-- require a political gestation period before the public and the Congress are prepared to deal with them. Therefore, it makes sense to start a legislative program in any area with those proposals and ideas that have been in the public eye sufficiently long to secure a degree of acceptance.

In context of a campaign to stabilize U.S. population growth, this means beginning with the establishment of a national family planning policy; that is, a policy to eliminate all unwanted births in this country.

Thanks to the pioneering efforts of people like Margaret Sanger and organizations such as Planned Parenthood, voluntary family planning is practiced or tolerated by a vast majority of Americans today. It has survived the political gestation period; and for the first time in American history, open debate over the question of public family planning programs is not considered political taboo by most members of Congress.

In addition to being the most politically advanced population measure, an effective family planning policy also promises a significant reduction in our birth rate. According to a recently published study by Professor Charles F. Westoff of Princeton, more than 20% of the births in this country are the result of unwanted fertility.

Giving low-income women the same access to family planning information and services that middle class women enjoy, and providing all families with safer and more foolproof contraceptives -- for nonpoor families have more unwanted children in the aggregate than poor families -- offers a relatively inexpensive and politically acceptable first step towards stabilizing our population growth.

Last May, I introduced a bill in the Congress with 28 cosponsors in the Senate and more than 60 in the House which would provide the legislative foundation for a comprehensive national family planning policy. This bill, S. 2108 -- which has the formal endorsement of the AMA -- would deliver family planning services to those now denied them and authorize desperately needed funds for increased contraceptive research. I am still hopeful we can move S. 2108 through the Congress before this Session ends.

The second important stage in an effective political strategy to stabilize U.S. population growth must be the reform of our abortion laws. If contraception fails, families must have the opportunity within a reasonable period of time to terminate unwanted pregnancies. It should not be within the purview of the State to either compel or constrain a woman from having an abortion. Such decisions are best left to individual conscience.

Finally, since contraception and abortion are only methods for preventing unwanted births, it is necessary to go beyond family planning to insure that the number of wanted births is consistent with stable population. In other words, the crucial third stage in our political strategy must be the creation of a national population policy; that is, a policy to develop noncompulsory means to reduce the average American family to a size consistent with a stable population.

Creating such a policy constitutes a much more difficult task than setting up a national family planning policy.

To begin with, science has not yet discovered the determinants of family size. We know very little about why one family wants two children while another wants six.

As a result, we simply do not know what kinds of voluntary incentives, rewards and education programs would reduce the birth rate to a stable growth level. The proposals such as income tax deductions currently being offered to

voluntarily lower the birth rate are only guesses in the dark lacking a hard, factual basis -- a point too frequently overlooked.

Furthermore, even if we knew how to reduce the birth rate, the public has not been adequately prepared for the creation of a national population policy. Population stabilization as a public policy still frightens most people. In many respects it is a premature issue whose political gestation period is not yet completed.

Therefore, in my opinion, implementing this final stage in a political strategy to stabilize our population growth will require the following steps:

First, it is important that Congress and other national institutions and organizations go on record in support of stabilizing population growth. This would have the effect of making voluntary population control a legitimate issue.

I intend to introduce a resolution shortly putting the Congress officially on record in support of population stabilization.

Second, the federal government must undertake a national campaign to educate the American public on the dimensions and consequences of the U.S. and global population problem.

The scare tactics that have been employed in the past to draw public attention to the population issue must be dropped. As I stated earlier, doomsday scenarios merely frighten people and seldom create the proper climate for constructive action. Instead, the public should be informed about the advantages of small families, the link between poverty and fertility, the cost in convenience and public resources such as increased taxes, crime rates and pollution bills of unchecked population growth, and the obstacle to development and political stability posed by high birth rates in the developing countries.

I intend to introduce legislation shorly to provide funds for such an education effort.

Third, we desperately need research and new data with which to develop non-compulsory methods for reducing the birth rate. Without reliable information on the determinants of family size and parental motivation, efforts to stabilize U.S. population growth by voluntary means will surely fail.

Therefore, I shall introduce a resolution in the Senate this month calling on the National Academy of Sciences to begin contracting immediately for the necessary social science research.

Gentlemen, the time to move from debate to action has arrived. Fate has placed us at that point in history where a responsible, rational, moral solution to the population problem must be found.

All of us -- you and I -- together have the ability to find and apply that solution.

The only necessary ingredient is the will to do it.

COMMENTS ON DR. PHILIP M. HAUSER'S REMARKS

Conrad Taeuber, Ph.D.

Doctor Hauser spoke of a population explosion, a population implosion, and a population displosion. As applied to this country I find such terms are somewhat more dramatic than the long-term developments which they are intended to describe. If there has been such a development as a population explosion in this country it lasted for some 14 years, beginning with 1947. In that year we had the expected large number of babies born, the result of the end of the war and the establishment of many new families which could not be started while hostilities were going on. The movement of population to big cities goes back to the beginnings of our national history. In recent years, there appears to have been a slowing down of that movement. The dispersion of population into the suburban areas is a matter of at least a half century of development, for ever since 1920 the suburban portions of our metropolitan areas have been growing more rapidly than the central cities. In more recent decades, in fact, many of the larger central cities have lost population, at the same time that their suburban areas were gaining rapidly.

The postwar baby boom was not a return to the large families of our pioneer generations. It reflected rather a significant increase in the number of women who took part in child-bearing. Compared to even a generation earlier, there have been some important changes in American patterns of family formation and child-bearing. A larger proportion of women marry and they marry at younger ages. A larger proportion of married women have children, and they complete their child-bearing within a shorter period of time. In 1960, only about seven percent of women 30-34 years old had not yet married. Twenty years earlier the proportion had been about twice as large. The proportion of married women who have no children has decreased significantly. The no-child or the one-child family has given way to the two or three child family. It is, of course, much too early to know what the effect of the ZPG campaign and announcements and pledges is likely to be. Only about one-third of the 18-24 year olds are college students. The high Post War rates were high only in relation to earlier rates in the United States and the rates in northern and western Europe.

The rate of growth in the United States has declined further and was only about one percent last year, and about one-fifth of that was due to net inmigration. However, a one percent rate of growth means an annual increment of about two million each year.

A major feature of the development of population in the near future is the fact that large numbers of young people will be reaching marriage and childbearing age, a kind of echo of the relatively large number of births some 20 years earlier. Unless they depart sharply from the patterns which have been set by young people throughout most of the last decade and a half, the number of births will soon increase. It is necessary at this point to make a clear distinction between birth rates or fertility rates and the number of births. Even if fertility rates were to remain stationary, the large increase in the number of young women would lead to an increase in the number of births. In 1970, the number of persons reaching their 23rd birthday is about a million more than was the case in 1969. In 1947, there were 3.8 million births. Up to that time this was an all time high in the number of babies born. However, we soon exceeded that number and from 1954-1965 the number of births each year exceeded 4 million. Last year we had dropped back to 3.6 million. The number of young people coming of age will continue at a relatively high level through the 1970's and into the 1980's. The large number of young people reaching marriage age has recently been

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Presented at the American Medical Association's Seventh Congress on Environmental Health, May 4-5, 1970, Washington, D.C. Doctor Taeuber is Associate Director, Bureau of the Census.

reflected in an increase in the number of marriages. Unless there is a drastic change in the popularity of marriage and childbearing, the number of children under five in 1980 will be substantially greater than in 1970.

Although Doctor Hauser did not imply that the availability of the relatively new oral contraceptives and the IUD will lead to reductions in birth rates and numbers of births, there is so much misunderstanding on this point that it may be worth a moment's consideration. The greater availability of more effective contraceptives may result in some differences in the timing of first and subsequent children. It may, of course, have important effects on the total number of children born. It should be noted, however, that the current decline in birth rates goes back to 1957--several years before the pill became generally available and even more years before the IUD was anything other than an experimental device. It is useful also to remember that the low birth rates of the 1930's were accomplished before either of these recent developments were known.

As Doctor Hauser points out, variations in birth rates in time are nothing new to the United States. In 1968 we had the lowest birth rate (births per thousand of the population) in our history. However, this rate was little different from those which we had achieved during the depression years. The last 25 years have shown that birth rates and the number of births can change rapidly. With increasing knowledge of control methods and increasing effectiveness of the methods which are available, there may be rapid shifts in the next years as people, especially the young married couples, change their evaluation of their own situations and prospects. Annual changes in rates are particularly subject to fluctuations. Therefore, the interpretation of changes from year to year is difficult, and total lifetime fertility becomes the critical factor.

It has long been known that there are important differentials in fertility. Fertility in the urban areas is lower than that in rural areas; fertility is lower as educational levels are increased, and also as income levels are increased. These differences are clearly observed in any comparison as of a given point in time. However, as has been demonstrated in the experience in the United States since the end of World War II, it is dangerous to argue that they necessarily hold equally over time. The so-called baby boom came in spite of rising educational and income levels and at a time when the population was becoming increasingly urban and metropolitan and women were increasingly employed outside the home. In effect, the differentials were continued and at the same time the levels of fertility were raised. Rising educational and income levels are clearly indicated, so is increasing urbanization and great labor force activity by women. However, this does not necessarily portend lower fertility.

In terms of public policy and public action, the gross numbers which Doctor Hauser cites need to be supplemented by some attention to migration. Americans have always been a highly migratory people. Over the last twenty-two years there has been an annual measure of the number of persons who have changed their residence during the year. The proportion has been a fairly steady 20 percent, with the percentage higher for the persons in their late twenties and lower for the persons of more advanced ages. Since 1960 there have been losses of population in approximately one county out of every three. There have been more persons moving out than moving in for about 1800 of our almost 3100 counties. About three-fourths of our total population growth has occurrred in the metropolitan areas, with most of that in turn taking place within the suburban sectors of those metropolitan areas. The relative stability of population numbers--or even decline--in the population of our central cities is the result of some substantial exchanges of population. The central cities gained some 2.7 million black persons, with their relatively higher proportion of young children, and lost some 2.1 whites with a somewhat higher proportion of older persons.

The consequences of such population shifts may be illustrated in relation to three major concerns: medical care, housing and education. The migrants take with them a need for housing at the destination areas, but do not take their housing with them. Likewise the migration of school-age children to an area may result in an increased demand for school rooms and teachers in the relatively concentrated destination areas without a compensating decline in the demand for the same educational facilities in the areas of origin. In fact, as populations in some of the areas of heavy outmigration decline, the cost of maintaining essential public services may actually increase. In concentrating on national trends, it is useful not to overlook the fact that these trends eventually are reflected in developments at local levels. Migration is not the only factor which makes for differential rates of growth. There may also be differences in the natural rates of growth of population groups. Two-thirds of the increase in the black population of the central cities is the result of an excess of births over deaths--only one-third is the result of migration.

It is, of course, an easy matter to disagree about the course of future developments. It may be necessary only to comment that the Census Bureau is planning to issue another set of projections of future population growth, and will then utilize at least one set of assumptions which falls below the lowest one which was used in the 1967 projections to which referred. A population of 300 million by the year 2000 may not be as likely as it seemed some years ago. However, it seems unlikely that the population at the end of the century will be very much below the 300 million mark. We have recently been consulting with a number of experts concerning the levels of future fertility which should be considered in a new set of projections.

Projections into the future normally take off from some past developments. Here the choice of the base line or period becomes important. The projections of metropolitan growth to which Doctor Hauser refers were prepared in the light of the most recent developments for which estimates were available at the time. If similar projections were to be prepared today, they would most likely lead to a conclusion of somewhat less rapid growth in the future than is shown in the figures which were used in this presentation. Developments in more recent years seem to signal some slowing down in the relative rate of growth of the metropolitan areas. Whether this is a long-term development, or simply a temporary one, can, of course, be determined only after the fact. The differences in the final outcomes would be matters of degree--there is no change in the long-term trend of more rapid growth of the metropolitan areas.

Population growth has important political and other social implications, whether one considers national growth or the differential rates of growth as between States, between cities and their suburbs, or those between metropolitan and nonmetropolitan areas within the States. Here we may well see a phenomenon which has long been known as cultural lag. The term was initially intended to characterize the observation that changes in the technology and machinery available to society seemed to proceed much more rapidly than changes in the social and political sectors of the culture. Populations trends also may move very much more rapidly than our adjustments in terms of governments, public facilities and other arrangements which are needed to supply the nation with needed services and facilities. On the one hand it is essential that we consider the possibilities of causes and effects of population trends in relation to many public programs and many of our contemporary problems. However, it would be a mistake to consider population trends as the primary determinants in such matters as urban problems, traffic jams, crime and drug problems and all the other ills of which we are so keenly aware. The problems and their cures are matters of complex social relationships, and most of them can be dealt with if we are willing to devote the

necessary resources to their solutions. Rapid population growth may serve to make solutions more difficult, a slower rate of growth may facilitate certain ameliorative measures. The demographic developments by themselves are neither the cause nor the cure of these matters.

Continued population growth in the United States seems clearly indicated for some time into the future. Even if women now entering childbearing should suddenly drop their completed fertility to the replacement level of about 2110 children ever born per thousand women completing the childbearing years, we would continue to grow well into the next century. Overall population growth is not necessarily closely related to the problems which Doctor Hauser listed and as he points out. It would be most unfortunate if the current public concern with the rate of population growth were to divert us from dealing with the tractable and seemingly intractable problems with which we must also concern ourselves because they are here and which are only minimally affected by slower or faster population growth rates, at least in the short run.